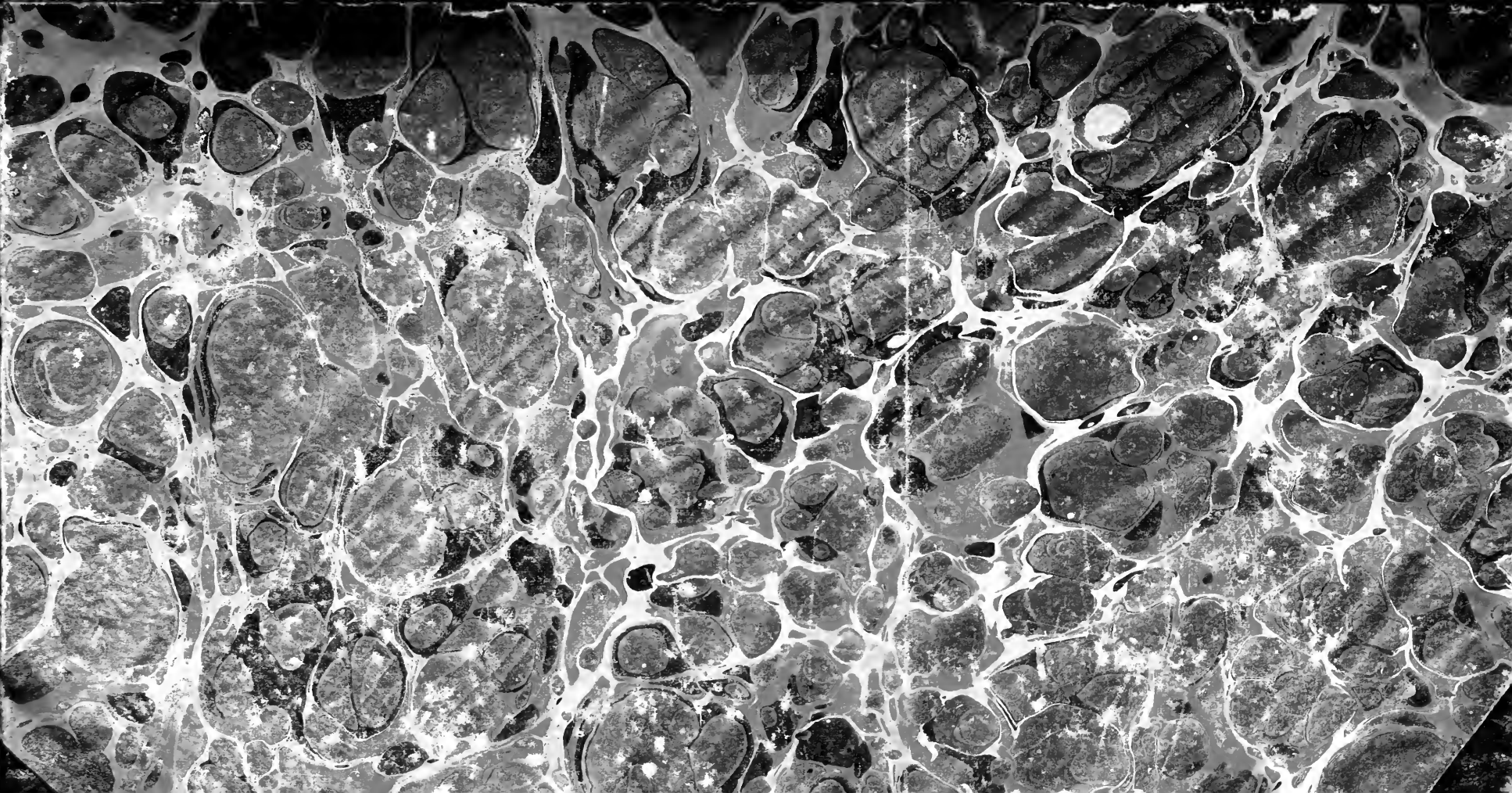


THE

PENNSYLVANIA FARM JOURNAL,

DEVOTED TO

AGRICULTURE, HORTICULTURE

AND

Rural Economy.

J. L. DARLINGTON, Editor.

VOLUME V.

PHILADELPHIA:
SAMUEL EMLEN & CO.

1855.

GENERAL INDEX FOR 1855.

CONTENTS OF DECEMBER NUMBER, 1855.

PENNSYLVANIA FARM JOURNAL.

VOLUME 5. WEST CHESTER, JANUARY, 1855. NUMBER 1.

The Fifth Volume.

In presenting to a discerning public the first number of the fifth volume of the Farm Journal, it is proper we should offer due acknowledgments to the many friends who have stood by the work from its commencement, and aided it by contributions from their stock of agricultural knowledge, and by forming clubs and collecting subscriptions in their respective localities; thus cheering the different publishers on, and dispelling all fear that Pennsylvania farmers could not, or would not, support a first class agricultural publication in their midst. Our acknowledgments are also due to a vast number of friends who have more recently taken us by the hand, and by whose aid we have been enabled to send the Farm Journal to nearly every post-office in this State, to most of those in Delaware, and to many in other States. To these, first and last, we tender our most hearty thanks.

It is our purpose to render the Farm Journal in every respect equal (and we hope superior,) to any similar publication in this country. We expressed this determination one year ago, and we refer the reader to the last volume as an evidence of how well it has been thus far realized. We point to that volume with pleasure and with pride, and may, perhaps, be permitted to add, that we doubt if there be a single subscriber who would be willing to divest himself of the information derived from it, for five times the price of subscription.

The present volume, we have reason to believe, will be an improvement on the last. We have been enabled to secure a larger list of able contributors, who will give their experience in different modes of culture, &c., in its pages. We shall continue to present engravings of the best stock in this and adjoining States, representations of all new agricultural implements of any value, choice fruits, pestiferous insects, &c., &c.

We have made ample arrangements for issuing a very large edition of this volume, and trust that by strict attention and a continuation of the kind exertions of old friends and new, to be enabled to mail *Twenty Thousand Copies at least.*

We shall send *this number* to a few first class farmers and public spirited gentlemen, in the hope that they will bring it to the notice of their neighbors, and induce the formation of clubs. For terms see last cover page.

The "back numbers" of the first and second volumes having been exhausted, we are preparing a second edition, which will be ready for delivery early in March when we will again supply full sets.

Suburban Residences.

The rapidly increasing taste in all our large cities, even among those actively engaged in business, for *Country Residences*, is a new and one of the most prominent features of the times. As we consider it, both physically and morally, a most healthy and commendable feeling, we have a few words to say as to the causes which have induced it, and also, by way of caution, to prevent disappointment from expectations often too ardently entertained.

There is no doubt that the great and rapid increase of population in the cities, the consequent increased expenses of living, high rents, luxurious habits, as well as positive wants of the people, which increased production of the country has hardly kept pace with, have created a necessity for additional outlet, which has been supplied as wanted, by the unexampled increase of railroad facilities and accommodations, extending in every direction.

Whether the country is resorted to for the summer months, as we believe it is by large numbers, merely because it is fashionable, or by others for economy, health or enjoyment, the fact exists that there now is, and we fully believe will continue to be, a regular exodus from the cities, every spring, of a large portion of their population, some for a few months and others for a longer period. By the conmutation system of tickets, cheap fares, and frequent trains, a business man, actively engaged in his daily duties, finds he can select a *permanent residence* five to twenty or thirty miles from town, and still be within an hour of his office; and that in addition to the greatly increased health of himself and family, he can also have about him, at almost nominal cost, compared with what he would have to pay for them in the city, a large amount of what are *there* considered *luxuries.* An abundance of fresh fruit at all seasons, fresh vegetables, gardens, lawns, graperies, conservatories, carriage and horses, pure air, delightful scenery, &c., *we know*, are attainable with the greatest ease, at a very small comparative investment, and it is because some of our friends have been a little disappointed in some of these particulars, that we now have a few words to say and a little advice to give.

In the first place, do not emerge at once from the densely populated city and its attractions into a sparsely settled, obscure neighborhood, away from schools, churches, stores, post-office, &c. A bit of romance, or transient enthusiasm towards some sequestered spot, has sometimes caused this to be done, and the result has

been ennui and disgust, and speedy return to city life. Let a locality rather be selected adjacent to a quiet and intelligent county town—a city in miniature—where all the above and other advantages of good society, libraries, &c., already exist in addition to frequent and speedy access to the city.

Secondly, avoid very extensive and costly buildings. These involve more care than comfort, are not at all necessary for the real enjoyment of country life, and however magnificent and imposing they appear, are nevertheless often coupled with trouble and perplexity from various causes.

Thirdly, especially avoid too much land. The mistake is often made of purchasing *a farm*, instead of a few acres. In nineteen cases out of twenty, to *business* men in the cities who move out of town, we would say do not go beyond ten acres, and to a much larger number buy only five. All that you want is a good and convenient mansion house, with barn and garden on two or three acres of land, reserving the other two for hay and pasturage. Don't encumber yourself with *farming*, or with the care of any but *one* man, who could well attend to a vegetable garden, fruit orchard, and all other necessary chores. Farming is a business, as much as storekeeping or the counting house, and requires knowledge and experience only to be rightly learned in a practical school. Its details, the purchase and care of implements, stock, manures, securing of crops, their cultivation, all require to be successfully and profitably attended to—the constant eye and care of the owner of the land. They require more attention than any one can give whose business is elsewhere, and there can be neither pleasure nor profit connected with them where there is the least neglect.

Fourthly, don't move into the country permanently unless there is some little taste and preference for it, really and truly, over town life. To those who can hardly exist even in the city without the excitement of the theatre, balls, parties, lectures and panoramas, the singing of birds and other accompaniments of the country will be the dullest kind of music.

For those removing from town to country, retired from business, of ample means, with whom economy is no object, the expenditure of surplus capital in attractive and beautiful, but not gorgeous, buildings, in laying out and embellishment of parks and pleasure grounds with choice trees, shrubbery and flowers, and in the luxurious and well furnished orchard and garden, is highly commendable and useful. We rejoice to see in the United States an increasing tendency to that social life, the charm of English society, typified by the retired "Country Gentleman." How much of real "*otium cum dignitate*," how many delightful associations cluster around the word. The town house and country house! Rural life in England! What is there in all her renown for letters, science, statesmanship, oratory and arms, that is not connected and associated with her rural life? The traveller, who now seeks for vestiges and memorials of her departed great ones, finds them almost exclusively in the country. The theme is a digestive and copious one, but our limits preclude us from entering on it farther.

The taste for country life in all classes, we repeat, is one of the most encouraging features of the times. Not surrounded and hemmed in by water as England, backed up also by illimitable acres clear to the Pacific, *we* can well afford to spare land for parks and pleasure grounds and country seats. No paupers will be made by withholding it from cultivation and production, because there is enough without it. "God made the country and man made the town," and the former, we trust, will continue to have the preference that the *natural* should always have over the *artificial*.

Dry Weather and Deep Plowing.

The present season of unexampled drouths in various parts of the country have at last awakened farmers to the *absolute necessity* of deep plowing. The cases brought to our notice have been too numerous to recite here, of full average crops, the result of deep plowing last spring, *exactly along side* of other crops in contiguous fields hardly worth gathering, the result of shallow, superficial plowing. Occular demonstration is the most convincing, and will satisfy, where mere theory. however sensible, occasions fears and doubts.

We have urged deep plowing so often in the *Farm Journal* that it seems almost superfluous repetition. All we want is to induce a fair trial of it one season. The question now occurs, which is the best plow for the purpose. While some think sub-soiling, or *stirring* only the bottom of the furrow, is sufficient, others advocate turning up deep furrows to the surface. This latter has always been our opinion, but we have foreborne to urge it much, knowing that our advice would not be followed. There is among a large majority of farmers an exceeding nervousness at the sight of a little yellow clay brought out from the substratum to the surface. It is as much dreaded as the nightmare. *We* say there can be no good farming without a deep soil, and there can be no deep soil (except in places where it exists naturally, like alluvial bottoms,) without deep plowing. The more yellow, sterile soil brought to the surface to be meliorated and enriched by atmospheric influences, fertilizers, &c., the better, and we have also observed, that where the first breaking up of the sod for corn is not deep, it is very seldom that depth is attained by subsequent plowings. It is true the corn crop will not in its early stages grow so fast on this upturned and inferior soil, but a little poudrette, or superphosphate of lime, in the hill, will easily remedy this, and when once fairly started, the roots will push down rapidly to the fertile soil beneath in quest of food and moisture, and soon outstrip that on shallow soil, a fact we have observed repeatedly.

Our advice is not to break up a field for corn less than ten or twelve inches deep, and there is probably no plow which will do this so easily and so well as the Double Michigan Plow. This, our readers are aware, is a kind of double plow on one beam; the forward one of small size turning over the sward four or five inches, thus relieving the work of the larger plow behind, going seven or eight inches deeper. This is done with the same team, a decided saving in this particular over the common subsoil, and a great economy of draught where deep plowing is the object. For five or six inches in depth only, the Double Michigan offers but little advan-

tage over the plow generally used in this country.

The Double Michigan Plow manufactured by Prouty & Co., of Boston, is the best of its kind, and has attracted great attention at exhibitions and plowing matches the past fall by the excellence of its work. It has carried off in several places the first premium over all other plows. It received the first premium at our own State Fair, as well as in several of the counties. Being remarkably strong, well made, and finished in every particular, we commend it to all who believe in deep plowing, and are not afraid of the yellow dirt; and to those who are, we say, use the subsoil and buy an extra team, but by all means stir up the ground deep with something.

For the Farm Journal.

Value of the Field Pea as a Renovator of Exhausted Soil.

BY J. S. HOUGHTON, M. D.

There is no theme of greater importance or more immediate interest to the farmer than the art of renovating exhausted soil or of bringing sandy and comparatively barren tracts of land into a state of fertility and profitable cultivation. The art forms, in fact, the basis of all good husbandry, and if it can be done economically and speedily, all other parts of the farmer's work may be carried on successfully.

Having worked some sandy land in New Jersey, which had been very much exhausted by previous bad farming, I have been led to examine this subject very carefully. The result has been to show me, practically, several methods of accomplishing the object, each in my opinion better, and less expensive than direct manuring with stable manure which has to be purchased. They are as follows:

1. Growing potatoes and other crops, with large compost of simple peat, prepared for use with lime and salt, in the proportions of three bushels of lime to one of salt, and eighteen or twenty bushels of this mixture to the quantity of peat used per acre—the lime to be slaked with brine made from the salt.

2. Using guano and bone dust, (the latter disolved with sulphuric acid) say 300 lbs. of guano per acre, on any crop you choose, (carrots being, where the soil is suitable, the most profitable for the manure.)

3. The growing of clover by the aid of guano and plaster, with little or no use of composts, and turning under the clover as a green crop.

4. The growing of the field pea, feeding the same to stock, and making manure for more valued crops.

The merit of the first three methods I will not now consider. The fourth method I esteem the best.

The field pea I find, is but little known at the north, though it has been cultivated to some extent in New Jersey. The chief reason why it has not been more valued, I think, is because it is not, in itself, a very saleable product, as grain, and it has not been tried like clover, as a renovator of the soil. At the South, in Virginia, South Carolina, and Georgia, the field pea is now much grown, both to be turned under like clover, and as food for stock.

The field pea is a clover plant, and like clover may be made to flourish on a very barren and sandy soil, with the lightest possible manuring at all, except the use of lime, or plaster of paris, or a little vegetable matter.

The vine grows about eighteen inches to two feet high, very rank, and spreads over a large space like the sweet potatoe or melon vine, and yields a great abundance of large pods, each containing a dozen or more peas, much like the small white bean in shape and size, though of different colors.

The merit of the crop consists in this—that it costs but little for seed; grows luxuriantly on the poorest soil; requires but little manure; and yields a large amount of valuable fodder and grain; while if turned under green it is equal in value if not superior to clover. It may be grown at once, where clover cannot be started, and requires but little cultivation. The vine green or dry, is eagerly eaten by cows or horses especially if served as "cut feed," and sprinkled with meal; and the grain, if boiled or ground, and fed as meal, will be freely eaten by horses, cows, hogs, and chickens, and is unsurpassed in its nutritive qualities even by wheat itself. Pea meal is especially useful for working cattle, as it abounds in the flesh-forming or nutritious principle, (nitrogen) to a greater extent than any other grain, and is also admirably adapted as food for hens, while laying, as it is rich in albumen, is the chief constituent of eggs, and also in sulphur, so necessary to produce the "hen fruit" in perfection.

I am not myself, so much in favor of plowing under green crops, as many other persons are. I confess to the weakness of feeling which prevents many persons from sacrificing a well grown crop to the improvement of the soil by ploughing it under. I prefer the plan of feeding all crops to stock and saving the manure which they produce. If the manure be carefully and properly saved, but little is lost by feeding to stock, while much is gained in working power, flesh, milk, eggs, &c.

Now take the field pea. You can grow it on sandy and barren soil, where you cannot make a good set of clover without great expenditure of time and money. I grew the southern seed, this last season, on the most barren spot on my farm, (a mere sand heap, where no respectable weed ever flourished,) by planting in the roughest way possible, with no other manure than a little charcoal. I did not even plough the field, and it has not been ploughed for many years. There was no sod on the field; it was a mere flowing sandy knoll. I just opened the furrows, say four inches deep, and sprinkled in them a light dash of charcoal dust, dropped the seed, having first soaked them in water. It was quite late when I planted them, (after all my corn was in) and fearing they would not mature (as the seed was from Georgia) I sowed them very thick in the drill, in the hope of having a large yield of vines for fodder. The peas sprouted quickly and came up in a few days, and notwithstanding the extreme drouth, and the burning sun-shine of last season, the vines grew rank and strong, and remained of a rich deep green the whole season, not a leaf turning yellow or curling up, till September, when the pods all ripened well, and gave a fine yield of peas. The exact yield per acre I am unable to state, as no attempt was made to ascertain it.

On another field, much higher and drier than the first, I tried a Jersey field pea, planting them in drills, deeply

ploughed and sub-soiled, and with rich and appropriate compost of guano, bone dust, peat, lime, potash, &c. &c. This experiment was also highly successful; but I cannot say which was most satisfactory; for I cut up the last named piece while partially green and fed it to cows and horses, vines, peas and all, as green fodder.

The cows eat the vines and peas, eagerly, and the milk very perceptibly improved in quantity and quality by their use, but exactly in what proportion I did not attempt to ascertain. After the cows had eaten the vines in the yard and had trodden some of them under their feet in the manure and dirt, a horse well fed on timothy and corn meal, was let loose in the yard, and eagerly devoured the dirty vine left by the cows.

The vines and peas were also fed, and pigs, which picked off and eat the peas, but did not eat much of the vine, though they would probably have done so if they had not been fed on corn fodder and other more juicy food.

The peas were also soaked and fed to chickens and hens, which, while having access to much other grain, still eat moderately of them.

Now this is my idea of the best method of using the Field Pea to obtain profit and manure.

Plant the pea as early as you do corn, in drills about two and a half feet apart, sowing about as thickly as you would for table peas, or rather less so. Plow your drills as deep as you can, if the nature of the soil permit such practice, and then subsoil eight inches more. My reason for sub-soiling is that the pea, like the clover, is a deeply rooted plant, and will be much aided, in times of drouth, by sub-soiling. Manure with dry muck, if you have nothing better, or with guano and plaster of Paris, composted with any vegetable matter, or loam, if you feel disposed; and cultivate as you would for any other peas, beans, carrots, &c.

The pea vines will cover the whole field, if the drills be not too far apart, with rich green vines and leaves, protecting the soil from the rays of the sun, and collecting vast quantities of food from the atmosphere. As soon as the peas begin to ripen, pick the food by hand, if you wish for seed, or the most perfect grain for meal; and as soon as the larger portion of the peas are gathered, and before the vines begin to lose their leaves, cut them with a scythe close to the ground, and cure as you would clover. If cut early, the vines will make a second growth fit for pasture.

If you have not time or help to pick the peas, and are willing to sacrifice the fodder to the seed, you can let the peas ripen more fully, and then cut the vines, when dry, and thrash out the peas as you would any others. Or, if fodder alone be your object, you may cut the peas before fully ripe, and cure vines and peas together, and feed them together, whole or as cut feed, in the winter.

It was the opinion of the men who cut my vines while in a half green state, that the yield of fodder was far greater than that of a good clover field, and that it was of superior value as food, to say nothing about the peas; but the produce of grain, it was evident, was equal to that of corn.

The Field Pea sold in Savannah, Georgia, and in Philadelphia, last March, at $1.12 and $1.25 per bushel. As a part of the food of cows, horses, hogs, or hens, I consider it even more valuable than corn, although it has little fattening power.

To give it satisfactorily, the farmer should have enough to cut a portion as green food, if he desired it; another portion should be cut and cured while still partly green for winter fodder (peas and vines)—and another patch should be kept for seed, cut when ripe and threshed out. Or, if convenient, the seed, and peas for meal, could be hand-picked as they ripened, and the whole field could then be used for fodder.

Now how is this pea to be a renovator of the soil? Why thus: it will grow on barren land, *with little or no manure*, where scarcely any thing else will, and furnish two tons or more per acre for green crop for turning under or for food, and a yield of grain equal to corn or wheat in feeding value. This will support stock, and make manure, where none otherwise could be made, easily and profitably. What other crop will do this? Some may say corn fodder. But the Field Pea will grow where corn fodder will not, and the latter yields no grain. Others may point to the bean. But that makes little, if any, hay. Others may speak of the root crops, the beet, carrot and parsnip. True, these will grow on sandy and barren soils, but, in my experience, they are found to require more manure per acre than even wheat to produce a crop worth keeping clear of weeds There is no plant, that I know of, which can be so easily and cheaply grown on sandy and worn out soils, and which affords so large a yield of food for stock, or material for manure, as the Field Pea. There is a Jersey Pea, which is called the "Crowder" by some people; but I do not think it equal to the best southern seed, at least for fodder. Either of these, however, will answer a good purpose. I think pea vines and corn fodder, served as cut food for milch cows, in winter, with a little corn and pea meal, would furnish an admirable and highly economical food; and if, to these articles, carrots and parsnips should be added freely, it would leave nothing to be desired by the milkman, or the maker of butter or cheese. The only thing I can think of which it might be desirable to purchase occasionally, where butter was the object, would be oil-cake, if it could be obtained cheap. And if any man, who can keep all the cattle and chickens he desires to, cannot produce good manure enough to renovate his worn out lands, then he ought to quit farming at once, and emigrate to Australia, or some other place where gold grows as a natural production of the earth, and don't even require digging.

Philadelphia, December, 1854.

For the Farm Journal.

European Agriculture.---No. II.

Agricultural Investigation Station of Moeckern—Agricultural Schools, &c.

LEIPSIC, October, 1854.

MR. EDITOR:—In a former letter I promised to give your readers some account of the Agricultural Investigation Station located at Moeckern, the scientific department of which was formerly under the care of Professor Wolff.

This is one of the most important agricultural points in Germany, but I have foreborne to speak of it thus far

that I might be enabled to do it more justice. And when I inform the reader, that I sincerely believe that it comes nearer to what we want in America, to promote correct agriculture, than any thing else I have ever seen, and without which farming can never be reduced to what it should be (to a practical science), he will, I trust, pardon me for calling his attention to the institution and its operations somewhat in detail, by a few articles on the subject.

My opportunities for observing it have been as good as they could have been desired. Moeckern is located about three miles distant from Leipsic, but much of the road runs through beautifully laid out shady groves on the banks of a small river, and one makes the distance almost unconscious of the extent of ground he has trod.

The Professor, Dr. Rithausen, who now has charge of the scientific departments, was carrying out some chemical investigations in the University Library of Leipsic, when I entered it last fall, and thus I had the pleasure of making his acquaintance. On visiting the investigation Station a few weeks ago, during the University vacation, and remarking to the Doctor that the time appeared "*langweileg*," because I was excluded from my regular work in the labratory, he kindly offered me a place at his bench to assist him in some plant and soil analyses, &c., that he had on hand. It is from opportunities thus afforded of seeing and learning the operations of the institution that I propose to write.

I cannot better set before the reader a clear exposition of the aims and objects of the institution, than by giving a condensed abstract of the constitution of the organization by which it was founded, and then some of the results of its operation thus far, to see to what extent and how it carries out its avowed object.

The preamble states that after the Saxony farmers of the Leipsic district had learned the necessity of cultivating an intimate relationship with exact scientific experimental knowledge and investigation, and the Leipsic Economical Society joined with them, &c., &c., they concluded to found in 1851 an Agricultural Experimental Station upon the farm of the Economical Society at Moeckern, in connection with a portion of adjoining land offered for the purpose by Dr. Cursius (a man noted for his liberal interest in agricultural investigation.)

The object of the station was to develop and extend agricultural knowledge by scientific investigation, in intimate connection with practical experiments upon the farm. To accomplish which object a professor should be appointed to attend to the strictly scientific department, and suggest experiments for the practical department, and a good skillful practical farmer to attend to the latter. Their united experiments and investigations to be directed to the following questions:

(a.) The growth of plants and the sources of nutriment in the same, to ascertain particularly how far the elements of the atmosphere are instrumental in the same, and what agents (as weeds, &c.,) prevent their growth.

(b.) The chemical constitution of plants and their effect upon the animal organism, as produced in foddering, for the purposes of keeping stock, fattening, milk and butter production, &c.

(c.) Metereological observations.

(d.) Cultivating and testing the qualities of the more seldomly cultivated plants.

(e.) Trying the efficacy of agricultural implements.

(f.) To collect reliable agricultural knowledge from all sources, domestic and foreign.

To carry out these investigations the institution shall be divided into a practical agricultural department with the farm, and a scientific department with a chemical labratory and apparatus, &c., &c.

Here follows a detail of the controlling committee, the sources of their funds, &c. Every Agricultural Society contributing seventy-five dollars annually can have a vote in the meetings of the controlling committee. Individuals subscribing the same can for themselves have the same privilege, or one vote for every seventy-five dollars so subscribed. The professor and farm inspector are admitted to the committee free of charge. The principal funds come from the Economical Society, the Leipsic District Farmers' Association, Dr. Cursius, and the Government of Saxony.

The committee or officers of the Society laid out a plan for the first year's investigation, of which the following is an abstract:

I. TESTING MANURES AND FODDERS.

1. To try the economical value of various kinds of Saxony manures, as Dresden Artificial Guano, Leipsic Artificial Guano, Bone Dust, ground and dissolved Sulphuric Acid, Rape Cake Meal (the residue of the vegetable (brassica rapus and b. napus) oil manufacture) and stale manure. The trial to continue three years on a soil receiving no other manures; the soil to be chemically examined before and after the trial.

2. To see to what degree bonedust and guano will pay when used each alone or mixed, one-third guano and two-thirds bonedust, on beets and rape seed; the effect to be noticed at the end of the second and third year.

3. To ascertain the value of rape meal as manure, and to what extent it is modified by mixing with bones dissolved in sulphuric acid and common salt.

4. To learn what manure is the most efficacious in the cultivation of the sugar beet. All those mentioned in 1 to be tried in various specified degrees of mixture and each alone. The produce raised to be chemically examined, and also practically tested in feeding and foddering stock, &c.

5. Investigation in manuring wheat with Peruvian guano, Chili saltpetre and sulphate of ammonia: (a) sowing it with the grain, plowing it under, and leaving it on top; (b) putting one-half on in the fall and the other half in the spring, (c) and putting it all on in the spring.

7. Manuring clover with lime, plaster of Paris, guano and dissolved (in sulphuric acid) bones.

II. CULTIVATION TRIALS.

1. To attend to the cultivation of the different kinds of the more rarely cultivated potatoes, winter barley and peas; different kinds of rye, corn (zea maize), tobacco, teasel, dyers' weed, lucerne, and ornithopus sativa.

2. The sugar beet, and the effect produced upon the root by removing its leaves for fodder during its growth. To ascertain the comparative value for food for stock of several different kinds of beet specified.

3. All plant, as far as possible, with deep and subsoil plowing. With twice plowing for the same crop, and with turning manures under and leaving them on top.

III. VEGETATION TRIALS.

Embracing a great number of experiments on a small scale, with chemically prepared soils, to see what substances are required, and to what extent, and in what state, and with what degree of relative admixture, they are required to produce the greatest possible yield of several crops specified. To see what substances are destructive to vegetation, and what are neutral with respect to it.

IV. METEREOLOGICAL OBSERVATIONS.

Embracing the height of the barometer, the amount of moisture in the air (by differential thermometer), the rain that falls, the temperature of the air, the soil, the subsoil and the earth at the depth of a few feet, the direction of the wind and general state of the weather three times every day.

V FODDERING TRIALS.

To find in what relation the nitrogenous and non-nitrogenous foods should be mixed to produce a maximum effect for keeping, fattening and milking stock.

The experiment to be tried (a) with sheep, to be fed with weighed quantities of hay alone, and mixed in various proportions with more concentrated food specified; the sheep to be weighed at regular intervals, and the fodder and their excrements to be chemically examined. (b) With cows to ascertain the changes in the quantity and chemical quality of the milk produced by the various kinds of food above noted, either alone or mixed in specified and accurately weighed proportions.

VI. AGRICULTURAL EXPERIMENTS

In the chemical labratory, independent of the foregoing, as the analysis of ashes, soils, drain and wash water, fruits, &c.

VII. TESTING AGRICULTURAL IMPLEMENTS

To try their applicability for various purposes specified.

The reader may see by the foregoing the avowed object of the association. It is remarkable for its practical bearing, the extent it embraces, and its completement of detail, much of the latter I have omitted above as it related only to this locality. It is an explicit avowal to unite science with practical agriculture, according to a definite, systematic and specified plan. I trust before many years there will be similar stations all over the United States, at least in the more enterprising States. Who will lay their hands to the work to found the first such station? What wealthy old man, dying without heirs, or with such as don't deserve his wealth, will immortalize his name by endowing the first such station? Is he ambitious?—he may rest assured of a monument in the next generation. Is he patriotic?—he cannot better render services to his country. Is he philanthropic?—'tis hard to conceive a better method of conferring a blessing upon the heads of the millions that are, in future centuries, to eat the bread of our American soil, than by thus contributing to elevate the standard of American agriculture. But, perhaps, says the cool minded reader, you had better see to what extent the station carries out its avowed object, before you are lost in enthusiastic admiration of the avowal of the same?

True, and it is from what has already been done, and what is now under operation, that I found my hopes of its success and desire to see similar ones in my native country. This part of my subject shall be my theme for my following letters.

In conclusion I would remark that this Station differs from an Agricultural School. There have been quite recently established in Germany several agricultural schools, as those of Theisbaden, Hoenheim, &c., (these I shall notice particularly in turn,) but the "stations" do not necessarily admit students. Their object is to stand at the outposts of science, and grind out original facts from uninvestigated nature, and shape them into science that they can be brought before the agriculturist and the student of the agricultural school. Such an institution could most advantageously be combined with an agricultural school and model farm, yet its operations should not be burdened with the responsibility of teaching to such a degree as to interfere with or prevent their original investigations. The importance of the last remarks will be more apparent after we consider the nature of these investigations. Although it has been but three years since the first of these stations was established, there are already three such in Saxony now (at Moeckern, Chemnity and Dresden). Adieu at present.

E. P.

For the Farm Journal.

Shanghaes, Cochin Chinas, &c.

MR. EDITOR:—During the last two or three years, I have been laboring under a severe attack of the "Shanghae fever." Recently, however, my symptoms show signs of some abatement of the disease, and as its virulence is being gradually mitigated, (probably from the depletion of my purse,) I am growing more and more of the opinion that I have been very considerably humbugged in some of my speculations.

I have been very careful, and incurred no little expense, to keep my several breeds of fowls apart. That is, I have a separate pen each for my Shanghaes, Cochin Chinas, Brahma Pootras, Chittagongs, &c., &c., and after careful breeding and close observation for two or three years, I am decidedly of the opinion that the four varieties above named are all the *same breed* of fowls. They vary in *color*, it is true, which can be as readily controlled as accounted for, but as to their being a *different kind*, I do not believe a word of it. I was green enough to pay high prices for each of these varieties, and I am now beginning to feel as though I had been "pretty considerably taken in."

Are you posted up in the laws of chicken-dom, Mr. Editor? If so, I would be glad to have your views through the columns of your Journal. J. McM.

Philadelphia county, Dec. 15, 1854.

We are *not* very well "posted up in the laws of chicken-dom," and as the poultry "doctors" have disagreed upon this question, *our* opinion would carry but little weight with it. The best authority we can quote upon the matter, for the relief of our correspondent, is a work recently published in England, a notice of which we find among the Reports of the Massachusetts Board of Agriculture. This work is entitled "The Poultry Book: comprising the Characteristics, Management, Breeding

and Medical Treatment of Poultry, &c., &c., by Rev. W. Wingfield, Honorary Secretary of the Cornwall Poultry Society, and G. W. Johnson, Honorary Secretary of the Winchester Society for the Improvement of Poultry."

As such distinguished authority is entitled to due consideration, we extract the following from a chapter headed "History and Description of the Shanghae Fowl:"

"There is a doubt, which had better be removed from the very threshold, usually conveyed in the question—"Are Cochin China and Shanghae fowls the same?" We have always entertained the opinion that they are; and as we have invariably found that fowls imported from China into this country, whether feather-legged or plain-legged, whether dark-plumaged or light-plumaged, came hither, directly or indirectly, either from Shanghae or its vicinity, we have long since concluded that "Cochin China" is a name altogether misapplied to this variety. This conclusion amounts to conviction, since we have received a letter from Mr. Robert Fortune, who has passed so many years in various parts of China, in which he says: "The man who first gave these fowls the name of Cochin China has much to answer for. I firmly believe that what are called Cochin Chinas and Shanghaes are one and the same. One thing is certain,—the breed you have in this country as Cochin China, are plentiful about Shanghae. They were discovered there after the war, and frequently brought to this country, and taken to India by captains of trading vessels. Was not this the date of their introduction into England? And what grounds has any one for supposing the fowls ever saw Cochin China? We thought that this variety might have been earlier known, owing to our long established commerce with Macao and Canton, but Mr. Fortune says that this breed is but little known in those warmer parts of China, and that, in fact, the southern Chinese were as much struck with the size of the breed as we were." He adds: "The Shanghae breed seems to be more common about Shanghae than anywhere else in the north, but I have found it over all the low country of that part of China. The southern breeds have been long well known to ship captains and English residents; but there is nothing very marked in their character."

"We have already stated that we do not believe there are any grounds for the belief that this variety ever saw Cochin China; and we think, with Mr. Fortune, (for his question is indicative as well as inquisitive,) that they were introduced into this country soon after the more northern parts of "the Celestial Empire," such as Shanghae, were thrown open to our traders, at the conclusion of the Chinese war, in 1843. At the poultry show held at the Zoological Gardens, in the May of 1845, there were prizes especially devoted to "Malays and other Asiatic breeds;" but these brought to the exhibition no other oriental variety than the Malays. In fact, we never met with any published notice of the Shanghae fowls until 1846, and we shall be near the truth if we assign 1845 as the year they were first imported. It was in that year that Her Majesty received specimens of them which she exhibited at the Show of the Royal Dublin Agricultural Society, in the April of 1846."

"Having thus traced out the date of the introduction and the place whence derived, let us next inquire something of the characteristics and treatment of the birds as they occur at Shanghae itself; and here Mr. Fortune again comes to our aid. In the letter already quoted, he says: "The Shanghae breed occurs both with feathered and unfeathered legs, but more frequently unfeathered. The most admired kinds there are the game [i. e. partridge or pheasant] colored ones. Many of them are [colored] much like the pheasant of the country. However, I am safe in saying that the Chinese do not attach so much importance as we do to purity of color; large size and large eggs are what they most admire and prize."

"It being certain that the true Shanghae fowl is met within its native district with plain legs, even more frequently than with legs feathered, or *booted*, as it is technically termed, the point often disputed is now settled, as to whether this is any demonstration of a distinct breed. Henceforth it must be held to be a mere matter of taste.

"Mr. Fortune's testimony settles another disputed point. It is very evident that, except as a matter of taste, the light colored should have no preeminence over the darker plumaged; and those Societies have acted judiciously which have given separate prizes of equal value to all the subvarieties of color. It is judicious, because it is needlessly placing a judge in a very perplexing position to call upon him to decide upon specimens of equal merit in all important points, but differing in color."

The work then speaks of the black, white, gray, (or so-called "Brahma Pootra,") buff, cinnamon, and partridge or grouse-colored Shanghaes as subvarieties of one breed. In regard to the "Brahma Pootras," specimens of which, introduced from this country, are known to the authors,—their "history" is summed up by an expression of the opinion, "that it will not prove a distinct breed, but either a variety of the Shanghae family, or the result of a cross between those birds and the Malay." This is just what they are *known* to be in this country. Some of them came from Shanghae, and some are a cross of these and the "Chittagong," a term which, as used by English authors on poultry, is only a synonym of Malay. Hence they were at first, and still are in many places, merely called "Chittagongs."

For the Farm Journal.

Profitable Hens.

Mr. Editor:—Below I give you a statement of the number of eggs, and the chickens that I have raised this year. I had on the 1st of January, 1854, thirty-five hens and two Black Spanish cocks; my hens are Black Spanish, Cochin China and Creelys; from these hens I have had two thousand four hundred and five eggs, viz: in January one hundred and fifty-eight, in February one hundred and ninty-one, in March three hundred and ninty-five, in April two hundred and sixty-four, in May three hundred, in June two hundred and thirty-seven, in July two hundred and twenty-three, in August one hundred and sixty-four, in September sixty-five, in October thirty, in November forty, and to the 6th of December eighteen, these with two hundred and sixty that were set make the above number (2405 eggs); from the two hundred and sixty set, I only obtained one hundred and

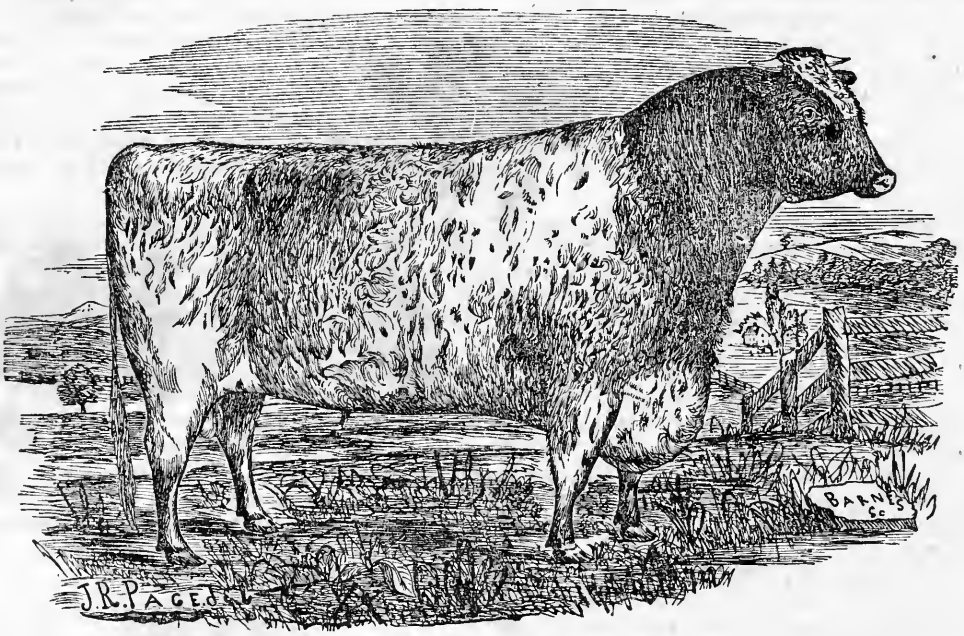
ninety-seven chickens, (I attribute the loss of so many eggs to their being pullets, as I never find their eggs to hatch so well as those obtained from those that have laid one season) and only succeeded in raising one hundred and fifty-one chickens. Most of the balance were lost before they were ten days old. I had twenty chickens hatched on the thirteenth day of March, and raised them all. My method of sitting my hens I consider good, and think I am well repaid for the little trouble that it requires, it is this: place a barrel (with a petition part half way back in it so as the nest will be in the back of the barrel,) on the ground with a box made of lath in front so as to confine the hen and keep others from troubling her, and place her food and water in it. I like this plan better than any other that I have tried. One of my pullets hatched on the thirteenth day of March, commenced to lay five days before she was five months old, and up to this date at three different layings has layed thirty-seven eggs, and is not yet nine months old; she is a rare exception. I find that my pullets that are hatched very early in the season lay at the age of from six to seven months, those raised later in the season do not lay sooner than from eight to nine months; one of my hens, on the fifteenth day after hatching out a brood of ten chickens commenced laying, and layed seven eggs before leaving her brood of chickens, which was at the beginning of the fifth week.

I think the number of eggs layed by my hens is very large, when the chickens raised and the consequent time lost by each hen in setting and raising them is considered; their principal feed was corn and occasionally oats, with what they could pick from a field of grass containing three acres.

If you consider that the above will be of any interest to the readers of your Journal, I shall be amply satisfied for the little trouble it has given me.

I have kept an account from day to day of all that I have mentioned above, and do not make any statement from memory, but from my memorandum book.

JOSEPH A. WOODWARD.



KIRKLEAVINGTON 1ST (11643).

Bred by George Vail, of Troy, N. Y.—light roan; got by imported Duke of Wellington (3654), dam (Lady Barrington 3d) by Cleveland Lad (3407), g. d. (Lady Barrington 2d) by Belvidere (1706), g. g. d. (Lady Barrington) by a son of Mr. Mason's Herdsman (304), g. g. g d. (Young Alicia) by Wonderful (700), g. g. g. g. d. (Old Alicia) by Alfred (23), g. g. g. g. g. d. by Young Favorite, son of Favorite (252).

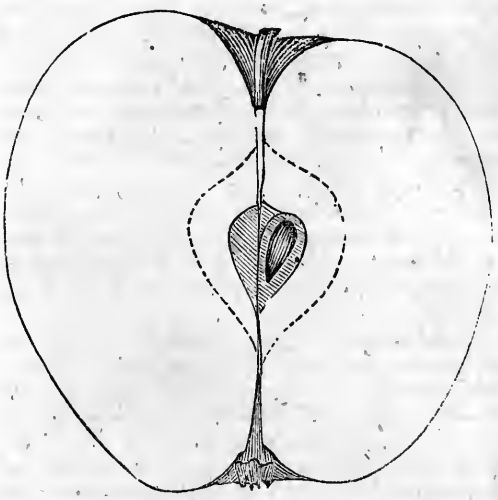
Kirkleavington's sire and dam were both bred by the late Thomas Bates. He was sold by Mr. Vail to Judge Sheldon, of Sennett, N. Y., who lately sold him at the price of $800 to Messrs. Paoli Lathrop, of South Hadley Falls, J. A. Clark, of Granby, and G. M. Atwater, of Springfield Massachusetts. He is kept on Mr. Lathrop's farm; is a large, healthy and vigorous animal—considered equal, and by some superior, to any bull ever bred by Mr. Vail. His dam received the highest prize (in her size) of the New York State Agricultural Society, and gave, as stated by Mr. Vail, twenty-two quarts of milk per day.

Mr. Lathrop, as we have before mentioned, has been breeding Short-Horns since 1839, and has produced some choice animals. He has always paid considerable attention to the milking qualities of his stock, and has given us the following memoranda in regard to the yield of some of his cows:

Lucilla, at four years old, averaged 55 lbs. of milk per day for a month, and made 14½ lbs. of butter per

week. The year following she gave in one week 337 lbs. of milk, which produced 15 lbs. 3 oz. butter. The greatest yield of milk in any one day was 59½ lbs. Louisa, at eight years old, averaged for the month of June 53 lbs. of milk per day, and made 14 lbs. 2 oz. butter per week. Dorothy, at five years old, made 15 lbs. 1 oz. butter per week, on grass. Cherry, at six years old, made 15 lbs. of butter per week on grass. Rose 2d, on hay alone, made 10¼ lbs. butter per week. Luna, at two years old, made 9 lbs. 2 oz. butter per week. Rose 1st, at two years old, gave from 32 to 35 lbs. of milk per day for the month of June. Ruby, at four years old, averaged 48 lbs. of milk per day for a month. The next year she calved in July, and in October following averaged 44½ lbs. of milk per day for ten days in succession. Yellowskin gave 18 quarts of milk per day, beer measure.

We may mention in this connection, that Mr. C. B. Clark, who has frequently had cattle of Mr. Lathrop, now owns several superior Short-Horn cows that are kept at Granby, one of which produced 15 lbs. of butter per week in the month of September, last year.



INDIAN APPLE.

This is a very handsome winter apple. Size, rather above medium, but less when the tree is heavily laden; fruit, conical, sometimes roundish; color, a beautiful dark mahogany red, covered with small yellow dots or spots on the surface, often lighter red around the base and cavity, almost inclining to a thin russet; stalk, slender, from one-quarter to half an inch long, set in a rather deep acute cavity; basin, often narrow and shallow, the calyx partially closed; flesh, fine grained and firm, yellow and rich, with an agreeable, moderate, subacid flavor; leaves, doubly serate.

This fruit is among the most valuable of our winter apples, keeps till late in the spring, and has been kept until the return of another crop. The tree is a moderate grower, and when in bearing produces more or less every year. Every other year the crops are abundant, not like many other sorts bearing two or three fine crops and are then exhausted, such as the Belle-fleur, &c. The fruit is always fair, and not covered with lichens or scabs, as many of our winter apples are, but has always sustained its high character. I have a fine crop of them this season. The original tree was found growing in front of the last Indian wigwam in Delaware, hence the name. JONATHAN C. BALDWIN.

Fruit Hill, 12th mo. 20th, 1854.

The Jennetting Apple.

We noticed this fruit on page 363 of our last volume, and copied from the Patent Office Report for 1853 the statement by Micajah Burnett, of the United Society of Shakers, Pleasant Hill, Mercer county, Kentucky, that the tree was "nearly three weeks later in blooming than others, (among which were the Rambo, Fall Pippin, Belle-fleur, &c.,) thus escaping the late frosts.

As nothing was said in Mr. Burnett's statement relative to the quality of a fruit, which, if good, would be of great account in this latitude, where late frosts so frequently render the orchards almost fruitless, and not being certain of its being described in any of the fruit works, we addressed a note to him requesting further information, which he has kindly given; from which it will be seen that it is is probably that known by the name of Raul's Jennet.

In his letter he states that the "Jennetting apple is largely cultivated in this section, and has been considered our best winter variety, on account of the certainty of the crop as well as on account of its good qualities. It is about the medium size—near that of the Rambo—matures late, becomes mellow about Christmas, is juicy, well flavored and good, and for culinary purposes it is unsurpassed. The tree grows slowly, though vigorously, is a full and heavy bearer, and the apples, if not earlier taken off, will hang on with great tenacity until late in the fall or early winter. Seasonably and properly gathered, and rightly secured, the apple keeps till June and later."

It is scarcely necessary that we should ask the attention of orchardists and farmers generally to this fruit. It is so manifestly one of the varieties that should have a place in every orchard in this latitude, that the mere statement of its good qualities will insure its general cultivation.

Domestic Recipes.

Rabbit Soup.—Begin this soup six hours before dinner. Cut up three large, but young and tender rabbits, or four small ones, (scoring the backs,) and dredge them with flour. Slice six mild onions, and season them with half a grated nutmeg; or more, if you like it. Put some fresh butter into a hot frying pan, (you may substitute for the butter some cold roast-veal gravy that has been carefully cleared from the fat,) place it over the fire, and when it boils, put in the rabbits and onions, and fry them a light brown. Then transfer the whole to a soup-pot; season it with a very small tea-spoonful of salt, a tea-spoonful of whole pepper, a large tea-spoonful of sweet-marjoram leaves stripped from the stalks, and four or five blades of mace, adding three large carrots in slices. Pour on, slowly, four quarts of hot water from a kettle already boiling hard. Cover the soup-pot, and let it simmer slowly (skimming it well) till the meat

of the rabbits is reduced to shreds and drops from the bones, which will not be in less than five hours, if boiled as gently as it ought. When quite done, strain the soup into a tureen. Have ready the grated yolks of six hard boiled eggs, and stir them into the soup immediately after it is strained, and while it is very hot. Add, also, some bread cut into dice or small squares, and fried brown in fresh butter. Or substitute for the fried bread buttered toast, with all the crust removed, and cut into very small bits or monthfuls.

Hare soup may be made in this manner. It is also an excellent way of disposing of old fowls. A similar soup may be made of fresh-killed venison.

For hare or venison soup, add (after straining it) about half an hour before you take it up, two glasses of sherry or Madeira, and a lemon sliced thin.

CHICKEN SOUP.—Cut up two large fine fowls, as if carving them for the table, and wash the pieces in cold water. Take half a dozen thin slices of cold ham, and lay them in a soup-pot, mixed among the pieces of chicken. Season them with a very little cayenne, a little nutmeg, and a few blades of mace, but no salt, as the ham will make it salt enough. Add a head of celery, split and cut into long bits, a quarter of a pound of butter, divided in two, and rolled in flour. Pour on three quarts of milk. Set the soup-pot over the fire, and let it boil rather slowly, skimming it well. When it has boiled an hour, put in some small round dumplings, made of half a pound of flour mixed with a quarter of a pound of butter; divide this dough into equal portions, and roll them in your hands into little balls about the size of a large hickory nut. The soup must boil till the flesh of the fowls is loose on the bones, but not till it drops off. Stir in, at the last, the beaten yolks of three or four eggs; and let the soup remain about five minutes longer over the fire. Then take it up. Cut off from the bones the flesh of the fowls, and divide it into mouthfuls. Cut up the slices of ham in the same manner. Mince the livers and gizzards. Put the bits of fowl and ham in the bottom of a large tureen, and pour the soup upon it.

This soup will be found excellent, and may be made of large old fowls, that cannot be cooked in any other way. If they are so old that when the soup is finished they still continue tough, remove them entirely, and do not serve them up in it.

Similar soup may be made of a large old turkey. Also of four rabbits.

SOUP-MEAT.—To make the soup *very good*, the meat (of which there should be a large proportion, rather more than a pound to a quart of water,) must remain in, till it drops entirely from the bones and is boiled to rags. But none of these fragments and shreds should be found in the tureen when the soup is sent to table. They should all be kept at the bottom of the pot, pressing down the ladle hard upon them when you are dipping out the soup. If any are seen in the soup after it is taken up, let them be carefully removed with a spoon. To send the soup to table with bits of bone and shreds of meat in it, is a slovenly, disgusting, and vulgar practice, and should be strictly forbidden; as some indifferent cooks will do so to save themselves the trouble of removing it. A mass of shreds left at the bottom of the tureen, absorbs so much of the liquid as to diminish the quantity of the soup; and if eaten is very unwholesome, all the nourishment being boiled out of it.

Mutton, however, need not be boiled to pieces in the soup, which will have sufficient strength if the meat is left whole. A piece of loin of mutton, that has been cooked in soup, is to many persons very palatable. It is well worth sending to table.

GREASE FOR COARSE BOOTS.—Take a coal made of white pine, of the size of a hen's egg, well burnt, pulverise it finely, mix it with enough of clean melted tallow to make it of the consistence of thick paste. Two or three applications will make the leather soft, and will keep the water out.

A GOOD RECIPE FOR BREAD, BREAKFAST AND TEA CAKE.—"Aunt Ann," in the *Ohio Cultivator*, communicates the following receipt for Bread, Breakfast and Tea Cake, and says she has seen nothing in that paper like it.—"Please try it, and if it answers satisfactorily, give it to the public in thy own name."—It is as follows:

"Take buttermilk, or any other sour or thick milk, let it boil, and then stand till cool enough to prevent scalding, have ready some flour and pour the whey over it so as to make a thick sponge, beat it well and then stir in the yeast, (which should be good,) then cover with a cloth and let it stand till it becomes light, make the bread entirely of the sponge, and make it quite soft and pliable, knead it some fifteen minutes, then let it get very, very light before moulding into loaves, but do not let the loaves get too light, and bake it slow. If the sponge should become sour, dissolve a little soda, or saleratus, and stir in. I often work sugar and butter into the light dough and make rusk, or a little butter alone to make rolls for dinner or tea; but if I want them for breakfast, I take some whey, butter and yeast, and make the dough over night.

"I also make a nice cake which suits very well for winter. Take half cup of butter, two of sugar, three of flour, and one of thick sour cream, (instead of eggs,) get it ready for the oven in the usual way, then sprinkle and stir in a tea-spoonful of soda, bake it slow: both the bread and cake suit farmers' wives better than our city Aunts and Cousins, who sometimes lack cream, &c. But tell the girls to try it, and if they miss once, try, try again, for they are all good."

Price of Land.

The increase of population in Philadelphia, and extended limits of the new consolidated city, have embraced much land that has heretofore been occupied for farming purposes. Farmers pursuing the ordinary routine of business to which they had been accustomed, raising corn, oats, wheat, potatoes, dairying or grazing, some eight or ten miles as they thought from town, have been startled by the visits of the *city* tax collector, the superintendent of pavement, requiring *curbing* to be done in front of some of their pasture fields, or perhaps some operator in land companies has enquired the price *per foot* of this or that field fronting on the highway, with a view of erecting a row of brick houses.

Nearly all the land within and around the new city limits has risen very much in value. Railroads have been made, or are now making, leading out in various

directions, and into fertile agricultural districts before inaccessible, and the facility of getting produce from thence to market, has become so easy as to place farmers one hundred or one hundred and fifty miles from Philadelphia, quite on a par with those within reach of the pavement.

We would not wish to unsettle improperly any of our young farmers, who are laboring on their old paternal acres, but we cannot help observing many of them within a circle of ten to twenty miles of Philadelphia, occupying farms worth from one hundred and fifty to two hundred dollars per acre, performing the same amount of labor, and getting *no more nett profit* from their produce than those living on *better* land, valued in the market at only fifty or sixty dollars per acre, but farther off from the city in respect to distance though almost as near in reference to time

A farmer some few years ago used to be an hour from the city at the distance of six miles, now he is equally near at thirty miles off, and can bring his milk, butter poultry &c., quite as soon, and with more convenience.

What we have to suggest, is, that some of our young farmers instead of emigrating to the west, or even settling down at home under the disadvantages we have alluded to, should take advantage of the present leisure season and visit some few of our flourishing counties within one hundred and fifty or two hundred miles of Philadelphia, through which railroad facilities now exist, or are progressing; examine the *quality* of the land, its productiveness, buildings, healthiness, and *real, not apparent, distance* by *time* from Philadelphia, and we think they would feel inclined to sell their city farms by the *foot* and buy by the acre, at one fifth or sixth the cost. Take any of the counties beyond the circle of Lancaster, Berks, Bucks, Montgomery, &c., and prime land may be obtained, with good improvements from fifty to seventy five dollars per acre. We were particularly struck with this fact not long since, in passing up the valley of the Lehigh from Eastown to Allentown, in Northampton and Lehigh counties, a most beautiful section of country, with fertile and highly improved farms, second to few others in the state, but *comparatively* unknown. The same may be said of Cumberland, York, Dauphin, some parts of Schuylkill, Northumberland, and many other counties, and we should be obliged if some of our subscribers in those sections would give the information through the Farm Journal of the value per acre, of good farms in their vicinity, the price of produce, and facilities of access to market. Such information is much wanted, and we believe would prevent many from leaving our good old state for the far west. Produce is now selling in many if not most of our best agricultural sections, at the same rates as at the head of market, and the necessities of the case will soon *compel* a change of system, by which land adjacent to the city must be abandoned for the heavy articles which can be raised any where, and reserved for those more perishable, such as the smaller fruits, fresh vegetables and truck of all kinds, &c. They must be converted from grazing farms into truck gardens, and cut up into smaller divisions, and supply the city with all such as will not bear extensive carriage. The district called the "Neck" which for the last half century has furnished the city with the best of vegetables, is now being rapidly encroached upon with houses, and has been selling at one thousand dollars per acre. The circle of cultivation must be extended, and we believe many are suffering from an annual and heavy pecuniary loss by remaining on farms under the circumstances mentioned, and cultivating the larger and heavier crops, which may be raised with as much profit one thousand miles off.

Grass Land---Grass Seed.

The following judicious observations from the New England Farmer are not less applicable to Pennsylvania than to New England:

It has frequently been remarked by practical men, that, in laying down lands to grass, the bestowment of a few extra pounds of seed, is not to be considered by any means as a useless expenditure of capital, but the reverse. Farmers often subject themselves to serious inconvenience and loss, by being too parsimonious in this particular; they proceed upon the erroneous principle that all seed sown will germinate, and that all that germinates will produce plants; whereas the truth of the case is, that under ordinary circumstances, a considerable portion of the seed never vegetates, or if it vegetates, does not obtain root, or produce plants. When allowance is made for loss and for defect in seed, when there are any indications that it is of a bad quality, we shall hear less complaint that "grass seed has not taken well." On light soils, which are deficient in retentive power, and where the requisite degree of compressibility is not easily attained, nothing is more certain than that a considerable portion of the seed committed to it—unless in a peculiarly modified season—will fail to sprout. The rapid descent of such soils, and their extreme permeability to atmospheric influences, causes them to become *dry*—a condition in which no seed can be made to develope healthily, or if it should, to produce a vigorous plant. The application of an extra allowance of seed, followed by the roller for the purpose of consolidating the surface is indispensable to success in stocking lands of this description.

Warts on Plum Trees.

The following is an extract from some remarks by Prof. T. W. Harris, the distinguished horticulturist. Those who are acquainted with the reputation of the author, will receive them with more than ordinary confidence:

"These have been attributed by many persons to the punctures, or to the presence of insects therein. I have not been able to find either the one or the other in the incipient warts, or in their immediate vicinity. It was only when these excrescences were well grown and were approaching to maturity, that insects were discovered in them, and not always even in this stage. Some of the twigs, containing incipient warts, were enclosed in a tight vessel in May, and were examined in August, when they were entirely free from the vestiges of insects, although the tumors, when cut open, presented the porous and cancellated structure peculiar to them when dry. The insects to be found in the warts in the course of the summer are of sundry kinds; such as the grubs of the plum-weevil, borers similar to those that attack peach and cherry trees, and the worm-like caterpillars of min-

ute moths. The last seem to be the most abundant and the most common. Their presence is made known by the castings or grain-like fragments thrown out of their burrows upon the surface of the warts. These tumors also afford nourishment to certain vegetable parasites, the little black grains, half immersed in the surface, to which, when mature, they give a deep black color. These little grains are fungi, which have been described under the name of *Spharia morbosa*. But neither to them, nor to the various insects before named, is the origin of the warts to be ascribed. The incipient warts can be detected, before the outer bark is ruptured, by the swollen appearance and spongy feeling of the surface. They seem to be the result of diseased action in the inner bark and new wood, while these parts are in a state of rapid formation. Upon examination, the cells of the tissues are found to be surcharged with fluid, and distorted in shape and arrangement. The plum tree has been called a gross feeder. It may imbibe fluids by its roots faster than it can exhale the superfluous moisture from its leaves; or the function of the latter may be checked by such sudden changes in temperature and in the hygrometric state of the atmosphere as are common in the spring. In either case, there would be likely to ensue an accumulation of fluid in the branches, and particularly in the tender issues of the new wood, where warts are most commonly developed.

"From experiments made upon my own trees, I have reason to believe that the growth of these tumors may, in great measure, be prevented by severe root-pruning, stimulating the bark in the spring, or before the buds expand, by washing it with soft soap, and by cutting off the warts as soon as formed, and applying salt or brine to the wounds."

Manures.

Editor Pennsylvania Farm Journal:—I notice that the columns of your Journal, of a late number especially, are largely devoted to the subject of manures and their application and preservation, and a few additional remarks deduced from experience may not be taken amiss.

The field where the result of this trial was derived contains about three acres, sloping gently towards the south, the soil consisting of a clay, slate gravel, mixed with loam,—being in a high state of cultivation, well limed, manured and subsoiled, (by well liming I mean from 130 to 150 bushels to the acre and even upwards, I have applied 200 bushels to the acre with the best results.)

This lot in 1853 produced over seven tons of hay at first cutting in the middle of June. The hay consisted of clover mixed with timothy. In the fall it was again mowed for clover seed.

It became desirable to have this lot lay over another year for grass, though a thing rarely done by farmers of this neighborhood; they rotate their crops every four years, for example: 1st grass, 2d corn, 3d oats and 4th wheat. The manure and lime are now mainly applied on the corn lands.

The lot was quite uniform all over in many respects. In the spring when the grass was taking a start, we applied 200 pounds Peruvian Guano broadcast, previously mixed with dry alluvium. Now, *honestly*, the effect was just nothing at all. I directed the attention of some of my friends to it, and all agreed that they could not see any perceptible difference whatever. I have now tried this same experiment for three successive years on different lots of ground, and with different parcels of guano, with the same result. On corn I have also experimented with, and even then it is far inferior to the cleanings of the hen-roost. I am fully convinced that its fertilizing properties have been much exaggerated, and I presume especially by those who make it a business to deal in the article. On lands like there are in this valley, which in natural fertility have been rarely surpassed, and besides have been extensively limed and plastered, guano avails us nothing.

The effects of guano may be, and no doubt are, far more perceptible on worn out lands, but it is very volatile in its nature, and I question whether such be not the worse for it in a year or two. I am sure in this, that guano has—probably from its volatizing properties—volatalized "*rocks*" in the pockets of my honest farming neighbors, for which they never got a just equivalent.

If we want guano we can prepare an excellent, if not a superior, article at home, and need not send ships to Peru with the hard earned surplus of the farmer, mainly for the purpose of enriching a set of speculators, and as I have already hinted, they are the persons who do no small share in lauding the fertilizing properties of this article. Farmers, think of this! Imposition is detested by us all, and the credulity of the farmer has been burrowed upon in no small degree. Why, the farmer has more means of making fertilizing materials than any other class of men, or at least sufficient to render fruitful any land that is arable. Now, if any body possess any extra philanthropy in this particular, why not endeavor to inform the farmer how he can avail himself of all these articles by means of his own exertions. But no, this would interfere with some of the renowned fertilizing wares.

Some few of the dandy portion of the farmers would probably consider it rather dirty work to make their own guano, &c., and would object to it on that ground. There is a *little* something in that. Yet even those very characters will commit deeds of the filthiest and darkest dyes in point of moral principle without hesitation. Dandyism and moral deformation hold close relationship—the fruit thereof is idleness.

All alkalies render the elementary constituents of the soil more soluble and twice more available for the elimination of plants. Now guano can do no more. Its virtues depend mainly upon its ammoniacal gas, which has an alkaline re-action. Some maintain that plants will just "drink up" this gas. This is an absurd idea. Plants must digest their aliment as well as animals, the functions being carried on by a different set of organs; yet all these functions should be well studied before we can begin to minister to their wants to any advantage.

As regards covered or uncovered manure banks—when manure is scattered carelessly all over a barnyard of a quarter of an acre in extent, and thus left exposed to the rains and snows, it will certainly lose much of its fertilizing property. However, this state of affairs

only indicates the home of a very careless manager.

Housing the manure banks does not answer well in this section; the mode of farming pursued affords much straw—more, in fact, than could be consumed by ordinary littering. Farmers here generally dung stables twice a week. The manure is drawn with horse and sled for this purpose to some convenient place, where it is out of the way, but never before the stable door, and carefully piled up in sections, in sizes proportioned to the cleanings. These layers are regularly covered with straw, until this surplus is consumed; the main portion is worked into the lower part of the bank. Straw is seldom sold off the farms.

The rains are thus left to fall upon it, which seems to effect just in a proper degree the necessary moisture for the fermentation all manures should undergo previous to application, or otherwise much of the fertile properties will not be rendered available.

Covered manure banks dry out too much. We are obliged to consume a large quantity of straw, and I have observed where the trial has been made by two of my neighbors, this straw would not get sufficiently moist to allow it to ferment; or as it is generally expressed, the manure would not act—it remained nearly all straw.

This difficulty might in some measure be overcome by manure cellars immediately below the stables, where all the excrementitious matter of the cattle would go to aid in bringing about the necessary moisture for fermentation. But this is not without objectionable features, for this very reason: all the affluvia would be more or less confined to the buildings, which would prove unwholesome for man and beast. Say you, "we can ventilate such stables." True, but such renders stables cold in winter.

There is nothing superior for this climate, to meet all the desired ends, than the stables in the old fashioned Swiss bank-barn. If these be regularly cleaned, and well littered, the cattle will be healthy; and the manure if properly piled up, as we have already pointed out, will prove of a very superior quality. I have seen these banks twelve feet high after they were fully rotten; they are generally left inclined on one side, so that the top is rendered accessible for the sled. When and wherever such are applied, or such banks are brought to make their distribution, it will mark the arid field with verdure. These banks are, after all, the true farmers' bank for the husbandman, the sure investment in which affords an annual dividend of rich and golden harvests. Manure constitutes in reality the true *touch-stone* of the phantom bubble of the alchymists, for it actually converts the crude soil into beautiful gold—a thing the philosophers of the middle ages have sought for in vain in other channels. With the attentive husbandman it is often converted into "rocks," (though not into "the rock of ages,") which have built our barns and houses for many long ages gone by. Truly yours, &c.,

P. G. BERTOLET, M. D.

Oley, Berks co., Pa., Dec. 1st, 1854.

Cure for Grape Mildew.

Mr. John Hayes, gives through the English Gardeners Chronicle the following "cure for the grape mildew:"—Take ½ lb of black soft soap, from 3 to 4 ounces of black sulphur, the same quantity of soot and quick lime, and add water sufficient to enable them to be worked with a paint-brush. As soon as the Vines are pruned, paint the wood well over with this mixture, rubbing it well into the rough parts with the brush. I have not seen the least symptoms of mildew since I have used it, either in the houses or out of doors, although we had plenty of it before the application was tried. This, therefore, may be worth the notice of Vine growers in foreign countries, the ingredients employed being cheap.

Profits of Fowls.

I have seventeen hens at this time, and have lost along during the season some four or six. They are the old fashion kind of hens, and quite a number of them are from four to seven years old. They have laid from about the middle of February to November 9th, inclusive, 2017 eggs, which at fourteen cents—the average price—amounts to $25 85. The cost of keeping during the time has been $10 37, all of which I have bought at this year's high prices. Thus they have netted me $12 66 clear profit. My practice is to keep lime and feed in the hen house all the time, and as a general thing to let them run at large. They have done little or no damage in the garden, to which they have free access. Corn I find to be altogether the cheapest feed for them. One hen stole her nest and hatched 10 chickens, and the cost of raising the four that were not killed is included in the above.—*Berkshire Culturist.*

Worth Knowing.

It is said that a small piece of resin dipped in the water which is placed in a vessel on the stove will add a peculiar property to the atmosphere of the room, which will give relief to persons troubled with a cough. The heat of the water is sufficient to throw off the aroma of the resin, and gives the same relief as is afforded by a combustion of the resin. It is preferable to the combustion, because the evaporation is more durable. The same resin may be used for weeks.

Guano on Potatoes.

The following from the Rural New Yorker corresponds entirely with our own experience and observation of its effects in this vicinity. Fair experiments have been made by our farmers, in their potatoe crop, of its value compared with barn yard manure, and almost uniformly in favor of the Guano. The Guano portion has continued greener and more flourishing through the season, and yielded much larger returns in the gathering:—"We have frequently recommended Peruvian Guano as a manure for Potatoes, thinking, from their comparatively high price, that its application would be found not only beneficial but *profitable*. Two years ago, H. C. Ives, Esq., at our recommendation, applied 600 lbs. of Peruvian Guano on two acres of potatoes, and left other two acres adjoining without any thing. The Guanood two acres yielded 410 bushels, and the unguanoed two acres 238 bushels, and thus 300 lbs. of Peruvian Guano per acre, costing about $9, gave an increase of 86 bushels.

This year, Mr. Charles W. Seelye, of Rochester, applied 300 lbs. of Peruvian Guano on two acres of potatoes, leaving four rows in the centre of the field without any dressing. The two acres produced about 225 bushels. The four rows without guano gave 11 bushels, and four rows the same length which received guano, gave 14 bushels. This is

equal to an increase of 24 bushels per acre, and estimating them worth half a dollar per bushel (a portion of the crop was sold on the ground at 62½ cts. per bushel) will certainly yield a handsome return for the $4,50 invested in guano. We saw these potatoes early in the summer, and the difference between the four rows, and the guanoed portions on each side, was very perceptible, and indicated a much greater increase than was realized. This was probably owing to the great drouth which shortly afterwards set in, for it is well known that guano requires a moist season to bring out its full effect. The small increase, as compared with Mr. Ives' experiment, is also probably owing to the same cause. Peruvian guano has been used in England, as a manure for potatoes to a considerable extent, for eight or ten years. We may fairly conclude, therefore, that English farmers find its application profitable, otherwise the practice would soon be abandoned. But potatoes generally command a higher price here than in England, and if guano is a profitable manure for potatoes there, why is it not at least equally so here? Guano will give as great increase of wheat here as there; in fact, if we may credit the statements of Virginia and Maryland farmers, it gives a somewhat greater increase; but its application here, as a general thing, will not be so profitable as in England, because wheat sells at a much lower price. With potatoes, carrots, cabbage, beets, onions, &c., the reverse holds true, and we believe a judicious application of *good* Peruvian guano will be found profitable. Under some circumstances, when hay is high it will also yield a good return on meadow land. If any of our readers have used guano, nitrate of soda, "*Mapes'* improved," or other superphosphate of lime, we should be glad to hear from them.

Minasi's Artificial Incubator.

We find the following description of Minasi's hatcher in the London Mechanical Magazine. Cannot some enterprising "fowl fancier"—a breeder of Black Spanish for instance—improve upon it, so as to supply an adjunct to those breeds that "lay constantly but never set:"—"Every one possessed of a knowledge of the circumstances under which the natural hatching of eggs is effected, will be aware that a steady heat of a suitable temperature, maintained for a certain number of days, and a sufficient quantity of fluid to supply the place of the aqueous exhalations which pass off from the egg during incubation, are necessary to the success of any attempt to produce the chick from the egg in a healthy and natural condition. In order to supply these Mr. Minasi constructs a water-tight case or tray of zinc, of about 1 inch in depth, and fills it with water, which is maintained at such a temperature that a layer of fine sand placed on the upper surface of the case is constantly kept by it at about 107°. Upon this layer the eggs to be hatched are placed, and covered with a sheet of glass or other suitable substance. In order to furnish the vapour necessary to compensate for the aqueous evaporation from the egg, which, if allowed to proceed to a great extent without any counteracting action, would lead to the destruction of the chick *in ovo*, the inventor arranges in the incubator a number of short tubes, extending from the under side of it to the upper, and reaching above the layer before mentioned, so that atmospheric or other moisture may pass up from beneath and distribute itself over the whole of the surfaces of the eggs. The lamp employed is fitted with certain improvements, also effected by Mr. Minasi, by which naphtha is burned, without the use of a wick, so as to keep up a constant temperature for several weeks without any attention; and in order to economize the heat obtained from the lamp, the former is made to traverse a spiral flue, to the sides of which a portion of it is continually transferred, a minimum quantity passing off through a pipe opening into the atmosphere. The heat transferred to the flue, as just described, is communicated to the water; and by the simple expedient of raising one end of the incubator, a continual circulation of the heated water is kept up throughout it. The under side of the zinc case is corrugated, in order that the chicks which are reared in a chamber, of which it forms the upper part, may the better nestle against it. We have seen about 150 chicks, hatched and reared by this apparatus, from two hours to 10 weeks old, which were in an exceedingly good condition."

Misers of Minutes.

The following from the Christian Observer although not "strictly agricultural" is worthy of a place in an agricultural journal, and who among us may not profit by the lesson it teaches:

"Take care of the pence and the pounds will take care of themselves," is the secret of growing rich. And in the time-currency, moments are the gold-filings—the precious atoms that, saved or lost, make or unmake a life. No man can afford to lose his minutes. The miracles of success that have been wrought in the lives of certain men have been achieved through economy of time, as close as Thomas Elwes's economy of farthings. Elihu Burritt, the learned blacksmith, once said that he acquired some knowledge of fifty languages during the intervals of his labors at the anvil. He treasured his minutes, as his only earthly "fortune." Dr. Mason Good, the learned English author, composed his translation of a Latin book in the *streets of London* during his extensive walks and rides to visit his numerous patients. His practice was to take in his pocket two or three leaves of the original. He read this passage over as he walked along until he had engraven it on his retentive memory. Then he translated the passage in his mind, corrected it, and when he reached home committed the translation to paper. He thus finished the work without omitting a single professional visit! Richard Baxter, who wrote more discourses and books, and visited more frequently his parishioners than any clergyman of that century, (thereby affording a rebuke and example to many ministers of our day) was a miser of minutes. His good example was contagious among his flock. He taught the Kidderminster weavers to fasten religious books on their looms, and study their contents while they were throwing the shuttle.

He that loses his minutes, loses his life—too often loses his soul. For we never *have* any thing but the present moment. The past is gone the future is not ours. And the sea captain who should sit and heave out his cargo by the single package would come into port at last with about the same character for sagacity as the spendthrift of time comes to the death-bed that ends his life-voyage. It is a total loss and no insurance.

It would be both curious and sad for us to cast up a strict inventory of our wasted moments in a single day. The time lost in the morning in debating with ourselves whether we shall get up or not—(instead of following the example of systematic John Wesley, who, when he was tempted to loiter in bed, was overheard to call out, "Well John Wesley! *you* may do as you like, but *I* mean to get up")—the time lost in indecision as to the day's work, in making long talks or long visits when shorter ones would achieve more, in idle reveries, in trifling awhile *between* each separate engagement—the aggregate of each day's loss from such causes would be startling. Added together, they might occupy longer time than it took Milton to write the Paradise Lost, or Bunyan to write the Pilgrim's Progress; longer time than Fulton was occupied in constructing his steamboat, or Gallileo in

making his telescope, or Newton in toiling out his immortal "Principia."

Reader make a close calculation of a single day's losses and you will be frightened. And let me hint to you, too, that you will work a great saving in your pastor's precious time by avoiding needless calls upon him in his study-hours, (which *ought* to be in the morning,) and by not keeping him waiting when he calls upon you. "Be short," is as good a motto for the parish as it is for the pulpit.

Why Don't He Do It?

We find the following home queries going the rounds among our exchanges, without name or credit, although deserving of a better fate, and what is more, of the careful reading of every farmer:

When the Farmer *knows*, that a gate is better, and, as a time-and-labor-saving fixture, cheaper, than a sett of bars and posts, and without calling on a carpenter he can himself make one, *Why don't he do it?*

When he has no other fastenings to his gates and barn doors than a stone rolled against them, and in a single evening, after supper, is able to make a better one, *Why don't he do it?*

Or when he sees the boards dropping from his barns and and out-buildings, and like heaps of rubbish lying in piles about the premises, and need only nailing on again, *Why don't he do it?*

Or if he is afraid of the expense of nails, and is always crying up the maxim of Dr. Franklin, to "save the pence and the pounds will take care of themselves," and he knows that the same Dr. Franklin also said that "many men are penny wise and pound foolish," and he is not careful to think of the precept contained in the latter, *Why don't he do it?*

If it is a saving of nearly half the manure of a farmer's stock by keeping them shut up in yards, instead of running at large through most of the winter, *Why don't he do it?*

If he knows that many of his fields would be greatly improved by ditching, and by the removal of large stumps and stones, *Why don't he do it?*

And when he knows that his pastures would yield nearly double the feed, and of a better quality, if the bushes were all cut and subdued, *Why don't he do it?*

And if he can add fifty per cent. to the product of his clover-fields, and even his pastures, by the use of gypsum, *Why don't he do it?*

If a farmer of fifty acres has (as he should have) use for a good corn-sheller and one of the many improved fanning mills, and he has not already obtained both, *Why don't he do it?*

And if it is cheaper, actually cheaper, to burn dry wood than green, and to use a stove instead of an open fire-place, *Why don't he do it?*

The Oregon Pea.

BY A. ROZEFL, OF LA VERGNE, TENNESSEE.

The Oregon pea was brought a few years ago from Oregon Territory. Whether it was found wild there, or was obtained from the Indians, I am not prepared to say. I obtained from the State of Mississippi, a year ago last spring, about a teaspoonful of seed, from the product of which I raised last season thirty bushels of peas. Had it not been for the cut-worm, the ravages of which were very great, I would have raised one hundred bushels.

The seed of this plant is very small—less in size than that of the "lady or sugar pea"—and of a pale green color, with a white "hilum," or eye. It grows on a bush from five to six feet high, with five or six large branches near the ground, and they, with the main stalk, put out other branches, until the stalks would make a bunch as large round as a tobacco hogshead, or near it. It grows more like cotton than any thing else I know of, only it is much larger, with branches not so horizontal. After leaving the ground a little, all these branches, with those which put out at every joint, bear from four to ten pods in a bunch, with about fifteen peas in a pod, which as an article of food, are superior to any thing of the kind I ever ate.

The stalks and leaves, which are very large and beautiful, make perhaps the finest hay in the world—stock preferring it to any other—and yield a greater abundance. The hay and pea together, are a better and cheaper food than can be raised from any thing else in the United States, for horses, mules, cattle, sheep, and hogs. I believe I can raise more and better feed for my stock, from one acre of land, than I can from five of any thing else I know of. It will grow on land so poor that it will produce little or nothing else; and tolerably poor land is better for it, and will produce more than rich land. This may appear strange to some, but it is nevertheless true. Rich land will produce more stalks, but not so many peas; in this respect it is like cotton. As an improver of the soil, I consider it far superior to clover, or any thing known in Tennessee, when fed off on the ground and then ploughed in.

If seed is the object one has in view in raising this plant, let it be sown in drills 4½ feet apart, one or two seeds in a place, one foot asunder along each drill. In the course of the summer, weed and cultivate with the plough or hoe, after the manner of raising bush-beans or Indian corn. For fodder or hay sow them broadcast, and lightly harrow them in, like wheat or other grain.

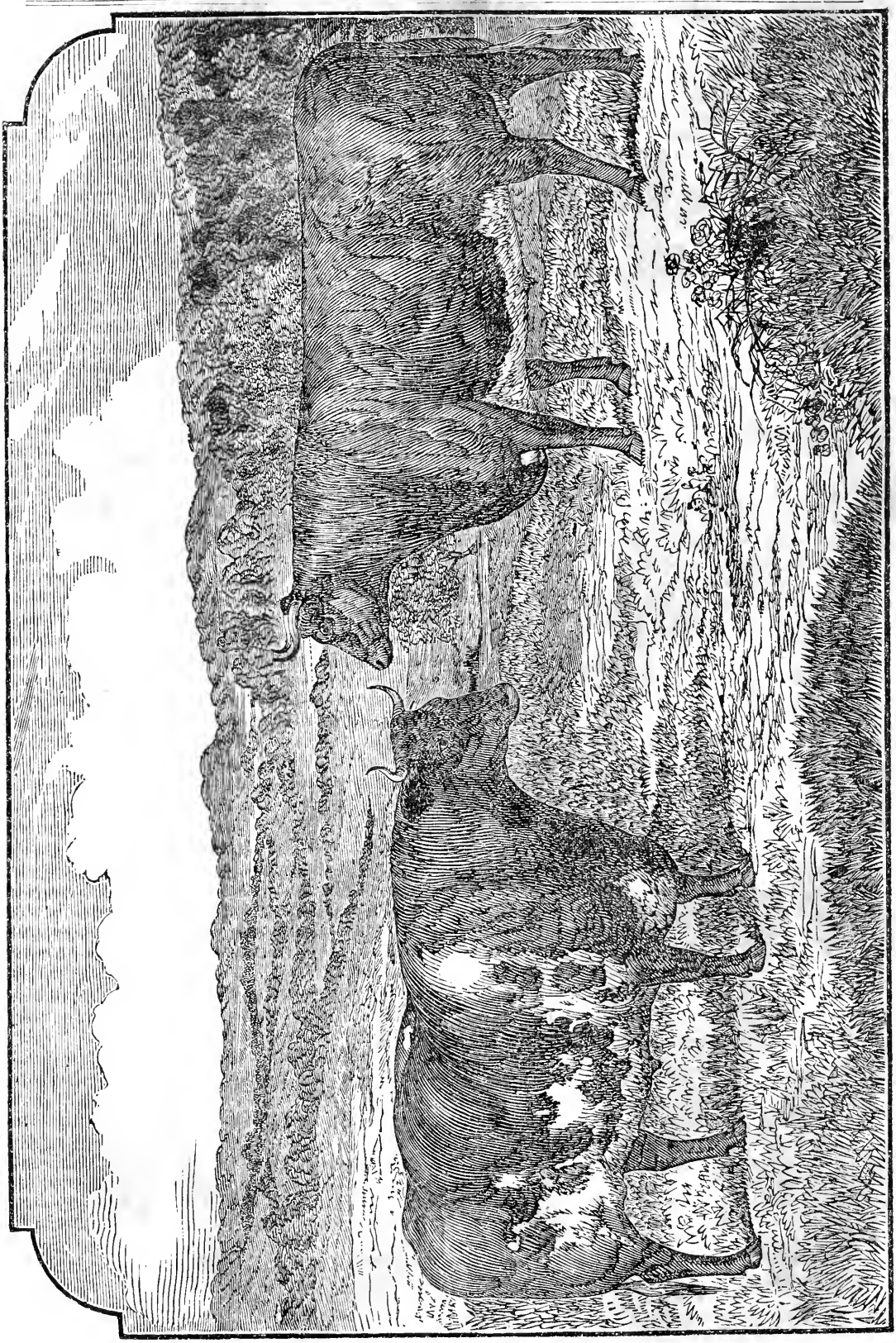
In short, taking this plant altogether, it is one of the finest and richest productions I ever saw; and I am satisfied in my own mind that it is the greatest acquisition to the farmers of the valley of the Mississippi, and the States adjacent, that has been introduced into this country—guano not excepted—for the last thirty years.—*Pat. Off. Report* 1853.

A Premium Orchard and Orchard Trees.

The Oneida Co. Agricultural Society awarded a premium of $15 to Jona. Talcott of Rome, for his orchard of 385 trees, the largest of which were planted in 1849, and are now sixteen inches in circumference. The following statement is from the report of the Society:—The land on which Mr. Talcott's orchard is planted, is mostly a sandy or gravelly loam with a clay subsoil. Previous to planting, it was plowed in back furrows, and the holes were dug along the ridges, thirty feet apart, three feet in width, and eighteen inches deep. In each hole was put a large wheelbarrow load of compost, made of stable-manure, lime, ashes and muck, under cover the year before. In planting the trees, surface soil was placed about the roots. The orchard ground has been cultivated to hoed crops. Once a year the trees have been pruned, and washed with strong soap-suds, a woolen cloth being used for this purpose. This washing has given the stems a clean, healthy look, and has tended to keep away the insects. At the approach of winter the soil has been heaped up about a foot around the trees. This kept away the mice."

Pure Air.

During extreme cold weather, every effort is usually made to keep out the cold, and sometimes so successfully as to render the atmosphere in stove rooms and chambers absolutely hurtful. Pure air, winter or summer, is necessary to insure health. A cool bed room is better than a debilitated body.



Pure Durham Oxen.

On the opposite page is a representation of a pair of Durham cattle, bred and fattened by George Brinton, of Birmingham, Chester county. They were slaughtered in March last, when five and a half years old, and weighed respectively one thousand eight hundred and forty-three, and one thousand six hundred and thirty-two pounds. They were sold to a Philadelphia drover for seven hundred and fifty dollars, and afterwards, we are informed, re-sold for one thousand dollars. Their live weight on the 30th of January preceding, when they were sent to the city, was two thousand seven hundred and twenty-four, and two thousand five hundred and sixty pounds. From the time of their arrival in the city until they were slaughtered, they were kept as "show cattle," and before being killed they had probably fallen away a hundred pounds each.

These cattle, as observed above, were pure Durhams; they were not raised with a view to making them extraordinary of their kind, and until the grass began to fail in September, 1853, had no grain whatever. From that time they received about four quarts per day until the beginning of December, when it was considerably increased. Their extraordinary growth, therefore, was almost entirely due to their breed, and to the rich green grass pasture with which the extensive domain of their owner abounds.

One of the pair, as will be observed by a glance at the engraving, was somewhat disfigured by large masses of fat on either side, but the other was as comely an ox as we ever saw; and although his back was not so broad as his mate's, yet it was very broad and level—so broad and level, indeed, that a large man might have found it a comfortable couch on which to repose without the fear of rolling off. They were worthy representatives of their race, of the superior herd of their owner, and of fields once enriched by human gore, the bloody fields of Brandywine.

Governor Brown.

Simon Brown, editor of the "*New England Farmer*," has just been elected Lieutenant Governor of Massachusetts by a large majority. If the farmers of the country, who constitute a vast majority of its *voters*, would entrust the offices to such hands, Politics and Politicians would soon cease to be a by-word.

The Grape Disease.

"The fate of European Vineyards may be regarded as sealed, for the present. The ruin of the grapes in Portugal, France, Italy, Germany, and the Balearic Islands, appears to be so extensive that the price of wine must rise considerably, unless its consumption should much diminish. And this becomes the more certain when it is remembered that Madeira is in the same predicament, and when we add, as we can upon good authority, that mildew has begun to show itself in Sicily, whither it seems to have travelled from the kingdom of Naples, where the grapes are in the same state as in France. How far Spain is exempt we are as yet uninformed, but we know that mildew prevailed largely in Grenada last year, and we have reason to believe that the mischief this year has been much greater."

From the above, which we copy from the London Gardeners' Chronicle, we learn that the grape disease is extending throughout Europe. No remedy has yet been discovered which can be relied on to stay its ravages; and the wine makers and wine bibbers are casting their eyes to South Africa, Australia, and adjacent islands. Unless our countrymen are lacking their reputed shrewdness, they will not let this calamity to the vine districts in Europe pass unimproved.

New York State Agricultural Society.

At the annual meeting, held at Albany, in the second week in February, the following named gentlemen were elected officers for the ensuing year:

PRESIDENT—Wm. Kelly, Rhinebeck, Dutchess county.

VICE PRESIDENTS—J. C. Jackson, New York; A. B. Congler, Rockland; George Vail, Rensellaer; Le Roy Mowry, Washington; J. C. Woodruff, Onondaga; J. Barber, Cortland; D. H. Abell, Livingston; S. M. Burroughs, Orleans.

CORRESPONDING SECRETARY—B. P. Johnson, Albany.

RECORDING SECRETARY—E. Corning, Jr., Albany.

TREASURER—B. B. Kirtland, Rensellaer.

EXECUTIVE COMMITTEE—Edgar C. Dibble, Gennesee; Elon Comstock, Oneida; Charles Morrell, Tompkins; T. B. Arden, Putnam; Ambrose Stevens, New York.

The Society have resolved to hold their next annual fair in the city of New York.

Hop Culture.

We have lately received several calls for information relative to hop culture, but having no personal knowledge on the subject, or of any of our correspondents being engaged in the business, we have selected the following from the pen of Wm. Blanchard, Esq., originally published in the New England Farmer, as the best article we have met on the subject:

"The hop is a native plant. It is found growing spontaneously on the banks and intervals of many of our large rivers. There are several distinct species, all bearing a near affinity to each other, (I have noticed five.) At present they are cultivated together, promiscuously; no preference having been given to any particular one of them by the brewer.

"The soil best calculated for the production of hops is a sandy loam, rather low and moist. I am led to this conclusion from my own observation, and from finding the lands which produce them to be naturally of this kind. Yet, I have seen fine crops raised on very different soils.

"I should recommend the following mode of preparing the land and managing the crop. In the fall (October) plough the land deep, nine or ten inches. In the spring following, pass a heavy, sharp, iron-toothed harrow over the land, in the same direction it was ploughed; after which, spread your manure evenly over the same, sixteen cords per acre, and more if the land be much reduced; then cross-plough the land nearly the same depth, and furrow it as for planting corn, the furrows to be at least four feet apart.

"It is customary to plant corn or potatoes with the hops, (I should prefer potatoes.) Plant every other hill in every other row with hops, thus placing the hop hills

at least eight feet apart. Put four cuttings from the running roots, about eight inches in length, into each hill, and cover them the common depth of potatoes.

"Many yards have been much injured by being planted too closely. It is of great importance to have the hills so far distant from each other as to admit a free current of air to pass through the yard.

"All the attention requisite the first season after the hops are planted, is to keep them clean from weeds, which is easily done when hoeing the crop planted amongst them. In the fall (October), to prevent their being injured by the hard frosts of winter, carry on and lay out of your cart one shovelful of compost manure on the top of each hill; manure from the hog-sty I should prefer

"In each following spring, before the hops are opened, as it is termed, spread evenly over the yard about eight cords of manure per acre, (coarse, strawy manure I should prefer, as it will have a tendency to keep the land loose,) and plough the field both ways at the first hoeing. They require but three hoeings in a season, unless necessary to subdue the weeds; the last of which should be performed when the hops are in full blossom, (about the beginning of August.)

"After the first crop, it is necessary to open the hops, every spring, by the middle of May; which is performed by making four furrows between the rows, turning the furrows from the hills, and running the plough as near to the same as possible without injuring the main roots. Then the earth is removed from the roots with a hoe, all the running roots cut in, with a sharp knife, within two inches of the main roots; the tops of the main roots must also be cut in, and then the hills covered with earth about two inches deep.

"The next thing necessary to be done is to set the poles. This should be done as soon as the hop-vines begin to make their appearance. By so doing, much time and labor will be saved in tying up the vines to the poles, as many of the vines will naturally take to the poles. There should not be to exceed two vines to one pole, nor to exceed two poles to one hill, nor any pole to exceed sixteen feet in height. Many yards have been very much injured by letting a greater number of vines grow on one pole, and almost destroyed by over-poling.

"Very much depends on paying due attention, in the spring, to select the most thrifty vines, and training them to the poles, which is done by fastening them to the poles with a piece of yarn, slightly twisted together with the thumb and finger.

"It will be necessary to inspect your hop-yard frequently, until the hops begin to blossom, and 'tie up the vines,' as it is termed, as they are subject to be blown off the poles by every high wind.

"As soon as the hops are ripe, which is about the beginning of September, they must be immediately gathered, or the crop is lost. The quality of the hops depends considerably on their being picked clean from leaves and stems. The labor of picking or gathering the hops may be well performed by women and children, having one man to a bin to handle the poles and to inspect the pickers. The bin is a wooden box, about nine feet long, three feet wide, and two and a half feet high, made of thin pine boards, that it may be easily moved over the yard, across which the poles are laid, and into which the hops are picked by hand. Care should be taken, when gathering the hops, to cut the vines two feet from the ground, that the roots may not be injured by bleeding.

"The most important part in the management of hops is the curing or drying them. Here I would note, that hops always grow first sort, and that all second sort and refuse hops are made so by unfortunate or unskilful management.

"Much depends on having a well constructed kiln. For the convenience of putting the hops on the kiln, the side of a hill is generally chosen for its situation. Care should be taken that it be a dry situation. The kiln should be dug out the same bigness at the bottom as at the top; the side walls laid up perpendicularly, and filled in solid with stone, to give it a tunnel form. Twelve feet square at the top, two feet square at the bottom, and at least eight feet deep, is deemed a convenient size. On the top of the walls sills are laid, having joists let into them in like manner as for laying a floor; on which laths, about one and a half inches wide, are nailed, leaving open spaces between them three-fourths of an inch, over which a thin linen cloth is spread and nailed at the edges to the sills. A board about twelve inches wide is set up on each side of the kiln, on the inner edge of the sill, to form a bin to receive the hops. The larger the stones made use of in the construction of the kiln, the better; as it will give a more steady and dense heat. The inside of the kiln should be well plastered with mortar to make it completely air-tight. Charcoal [that made from yellow birch or maple I should prefer] is the only fuel proper to be used in drying hops. The kiln should be well heated before any hops are put on, and carefully attended, to keep a steady and regular heat.

[TO BE CONCLUDED IN NEXT NUMBER.]

George E. Waring, Jr.---Agricultural Pretension.

"A person called George E. Waring, Junior, has lately published a book on the Elements of Agriculture, dedicating it to his "friend and tutor, Prof. James J. Mapes," whom he calls "the pioneer of agricultural science in America." Of course, "Prof. Mapes" recommends the book as "superior to any other elementary work extant." From what we learn of this "pupil," he bids fair to soon equal his famous instructor. He advertises himself in his book, and elsewhere, as "Consulting Agriculturist," and offers to visit farms, recommend treatment, and give "letters of advice" at $25 each."

We copy the above satirical reference to the author of the "Elements of Agriculture" from the Boston Cultivator. It appears as editorial, and has appended to it an article from the Ohio Statesman, in which he is farther alluded to in terms more appropriate to the columns of a low, political and reckless newspaper, than one intended for the benefit of the *farmer*. The opportunity has been cheerfully embraced as usual for a "hit at Mapes."

We are beginning to tire at this continued tirade of abuse and defamation. Every tub should stand on its own bottom. If the superphosphate of lime is as worthless as certain of our cotemporaries at the north assert, there is still no reason, we think, for the rude and ruth-

less personalities against J. J. Mapes with which their columns continue to teem. He has done the State some service both as a first rate practical farmer, and as the working editor of one of the best agricultural papers in the country, which has performed its full share, and more than most others, in spreading broadcast improved and scientific suggestions and practices. If the *real* value of his superphosphate, the actual bona fide results from its use, are made the *test*, whether he or his defamers are in the right, we have in this State, particularly in the eastern section of it, any amount of the most positive, substantial and reliable evidence to prove the extraordinary and unprecedented benefits from its application to corn, wheat, oats, potatoes and pasture. What matters it to the farmer if certain wise and knowing ones to the east of us have examined it in their *laboratories*, and find it good for nothing, when a well filled corn crib or hay mow, proves directly the contrary? Which is the most reliable? We have never analysed Mapes' superphosphate, and have had no occasion to do so. We have, however, tried it on our farm with the happiest results, have had our oats field dotted over with luxuriant spots, indicating where it had been applied to each hill of corn. Whether he is or not a regular Professor, whether he is as learned and scientific as his opponents, whether the superphosphate is a new article or an old one, whether he knows any thing or is a know nothing, is short or tall, good looking or otherwise, are all irrevalent matters to those who judge of things by their *results*.

In respect to George E. Waring, he is entitled to the credit of having, although a young man, written one of the best, most useful and practical works on the Elements of Agricultural Chemistry yet published in this country. For its particular use as a hand-book, simplified, and adapted to the use of schools, no less than an *introduction* for the farmer to a most important, though to him often abtruse, department of his business, it is precisely what was wanted at this time. Many an experienced author has written volumes destined to be far less useful, and make far less impression on the mind of the masses than this unpretending little volume. We should be glad to see it in every district school in the land. Let the Boston Cultivator disprove of its contents rather than chime in with the scurrilous language of the Ohio Statesman against a young author. If we cannot have decency and charity in *all things*, let us at least adopt a grade applicable to agriculture and horticulture.

To Destroy Moles.

Mr. J. L. Darlington.—Dear Sir:—I find in the last number of the Farm Journal, an inquiry in relation to ground moles and the best mode for destroying them. Mr. Kelsey, states that they have been injuring his corn crop, and fears by present appearance they may be still more hurtful next season. The best manner of destroying them is one that is within the reach of every farmer, and he only need complain of their havoc in the planted field who has not given the remedy below a fair trial.

Take one scruple of strychnine, one half pound of corn meal, and and a tea spoonful of lard. Take the lard and warm to soften, then stir it thoroughly with the corn meal, then add strychnine—by these means the strychnine will adhere to the meal, place this at such a place in their roads where they meander along frequently, and cover the top with a stone that it may not be covered up with earth. The smallest quantity will be sufficient to destroy them, and also posessing a peculiar qualification in action that when once in the system in a poisonous dose, death will be inevitable and may take place momentarily. I deem it unnecessary to enter into any detail respecting its action, suffice it to say, that it is supposed to act altogether on the nervous system.

This poison will also answer for other vermin such as mice, rats, &c. I need hardly add that the most profound precautions are necessary, in using the same for the reason indicated, being poisonous alike to all animals and should always be placed with a certainty beyond the reach of those which it is not desired to destroy. The article can be obtained at any drug store or country physician. E. K. BEAVER.

Worcester, Montgomery co., Pa., Dec. 7th, 1854.

The best Soil for Fruit Trees.

The editor of the American Agriculturist, good authority by the way, says:

After almost a half century of experience in raising fruit, we are decidedly of opinion, as a general rule, that the best soil on which to raise fruit, is that just cleared of a forest. The surface should be rolling or descending, and moderately dry and rich. Such ground needs little or no preparation; the roots of the forest trees as they decay keep it loose and mellow, and afford the exact food necessary for a rapid and healthy growth of the fruit trees; and the soil abounds plentifully in those elements which are requisite to form the most perfect fruit. Another consideration, and a very important one is, that fruit trees grown on recently-cleared forest land, are much less diseased than those grown on old land, and the fruit is not near so liable to be attacked by insects.

Information Wanted.

J. Lacey Darlington, Esq.—Dear Sir:—Allow me to inquire if your experience has placed you in possession of any means to prevent stall feeding cattle from licking themselves. As I have a pair of cattle now feeding whose joint weight yesterday was four thousand one hundred and ninety seven pounds, and who have a desire to the above vice, I wish to prevent them from it as I think they do not fat so well. I have heard that outward applications of some kind could be applied to allay the irritation in the skin. If you or any of your correspondents know of any thing valuable in this way, I would be greatly obliged if you could communicate it through the pages of the Farm Journal. M. J. P.

Schuylkill, Dec. 2th, 1854.

Distant Subscribers.

On the eleventh of December we received a letter from Plympton Kelley, dated, Portland, Washington County, Oregon Territory, containing the money for his own subscription and that of F. N. Elliott to the fifth volume of the Farm Journal. Mr. Kelly has been a subscriber for the last three years, and all that time has not missed a single copy, although the Journal has to travel over three

thousand miles, by sea and by land to reach him. We could wish that all mail routes were as well managed.

Address of the Hon. Marshall P. Wilder,

DELIVERED AT THE BANQUET AT THE NATIONAL CATTLE SHOW, SPRINGFIELD, OHIO.

Friends of Agriculture and Fellow Citizens:—In behalf of the United States Agricultural Society, under whose auspices this exhibition is held—In behalf of the citizens of Springfield, by whose liberality we are here assembled—and in my own behalf, I present you cordial salutations, and bid you welcome to this our festive board.

Come ye from the Pilgrim shores of New England, from the plantations of the sunny South, from the great valley and fertile fields of the West! Come ye from the walks of professional life, from the halls of legislation, from the marts of business, or from the high places of power—from whatever section of our land, from whatever station of society, *welcome*—a right hearty WELCOME— to the joys and pleasures of this occasion.

We have suspended our ordinary cares, toils and conflicts of business, and come up to this thriving city from our different and distant homes, to give expression to a common and important sentiment—the love of Agriculture.

We meet here for no sinister motive, no sectional object, no partizan purpose. We stand here upon a platform, broader, deeper and firmer than that of any politician or partizan: a platform upon which these may stand side by side with the noble yeomanry of our country, honoring them and honored by them. We are here for the promotion of a department of that great art, upon which, more than upon any other, depend individual happiness and national wealth, prosperity and power; an art which is the parent of every other industrial pursuit, and to which the special blessing of Heaven is vouchsafed.

I congratulate you upon the great interest awakened, in our age and country, in the cause of Agriculture; an interest manifested by the multiplication of societies and periodicals throughout the land. I congratulate you upon the wonderful improvement which science has recently made in the implements of husbandry, and in the arts of cultivation—upon the facilities for the transportation of agricultural products to the great markets of the world—and especially upon the improvement of our domestic animals, and the laudable enthusiasm which many of our worthy citizens have manifested in the importation of the best breeds of cattle.

It was the latter that suggested the idea of this exhibition, and it was deemed suitable by the Executive of the United States Agricultural Society to encourage this praiseworthy enterprise, and to accept the generous invitation of its projectors, approved as it was by the Ohio State Board of Agriculture.

This is the first National Exhibition of Cattle ever held in America; and I do but express the common sentiment of this assemblage, when I say that it has more than realized the anticipation of all concerned. It has been eminently successful, and alike honorable to the citizens of Springfield, to the State of Ohio and to this great Republic.

There have been about two hundred entries at this show. Among them we have seen such samples of the Durhams, the Herefords, the Devons, the Ayrshires, the Jerseys, and grade animals, as it has seldom or never been the happiness of man to behold in one show; and larger premiums have been offered for the encouragement of that department of American husbandry than ever before excited competition.

Among so many specimens of rare excellence, no wonder that the judges have found it difficult to decide upon their respective merits. Our only regret is that premiums cannot be awarded to each competitor. But there is one honor which seems sufficient to satisfy the ambition of any one, the honor of adding to the interest of this exhibition, and of thus promoting a pursuit second to no other in the country.

The report of these proceedings will occupy an important place in the transactions of this Society, and will go down to posterity honorably associated with the history of this place, and of American agriculture.

And here permit me to tender our most cordial thanks to the donors whose liberal contributions have supplied the funds for this exhibition; to its Board of Officers and Managers, to whose skill in designing, and whose energy in execution, we are so much indebted to the order, convenience and taste, which have characterized these proceedings; to the judges, on whom has devolved the onerous duty of awarding premiums; to the contributors, who so nobly have endured the risk and expense of placing their valuable animals on exhibition. Especially do we present our heartfelt acknowledgements to our distinguished guests who have honored us by their presence, and who, we trust, will instruct and encourage us by their speeches; to the good citizens of Springfield and vicinity, whose large hospitality we have enjoyed; and last, but first in our affections, to the ladies, whose presence adds so much to the interest and beauty of this banquet, and whose approving smiles encourage us in the laudable pursuits of life.

Friends and Fellow-citizens:—In conclusion, permit me to extend to you the right hand of fellowship, and to invoke your aid in favor of the cause we seek to promote. While the nations of the Old World seek for glory in war and the acquisitions of the sword, let us cultivate the arts of peace, and let us remember that the history of a prosperous people is inscribed, not on the star spangled banner of military fame, or of political preferment and power, but it is seen in the peaceful triumphs of the plow, in fields of waving grass and grain, in thriving flocks and herds, in highly cultivated farms and gardens, in the refined arts of rural life and cultivated taste, and in the grateful incense which rises from the altars of an industrious, intelligent and virtuous yeomanry.

Extracts from an Address Delivered by the Hon. Jeremiah S. Black, before the Somerset County Agricultural Society.

Without Science, man the ruler of this world, would be the most helpless of all animated beings. His Creator made him the monarch of the earth, and gave him dominion over it; to govern and control it; to levy unlimited contributions upon it, and convert everything in it to his own use. But he found himself at the head of a revolted empire. All its physical forces were in a state of insurrection against his lawful authority. The inferior animals were his enemies. The storms poured their fury on his unsheltered head. He was terrified by the roar of the thunder, and the lightning seared his eye balls. He was parched under the hot sun of summer, and in winter he was pierced by the cold. The soil, cursed for his sake, produced thorns and thistles. The food that might sustain his life grew beside the poison that would destroy it, and he knew not how to distinguish the one from the other. The earth hid her minerals deep in her bosom, and guarded them with a rampart of thick-ribbed rocks. The rivers obstructed his passage; the mountains frowned their defiance upon him; and the forest spread its gloom around him, breathing a browner horror upon the dangers that beset his way. If he left the dry land and trusted himself to the ocean, the waters yawned to engulph him, and the tempest came howling on his track. He seemed an exile and an outcast in the world of which he was made to be the

sovereign. But Science comes to rescue the powerless king from his misery and degradation. Gradually he learns from her the laws of his empire, and the means by which his rebel subjects may be conquered. From age to age he accumulates the knowledge that clothes him with power, and fills his heart with courage. Step after step he mounts upward to the throne which God commissioned him to do homage. The subjugated elements own him for their lord, yield him their fealty, and become the servants of his will. The mine surrenders its treasures; the wilderness blooms around him like a new Eden; the rivers and sea bear his wealth upon their bosom; the winds waft his navies round the globe; steam, the joint product of fire and water, becomes his obedient and powerful slave; the sunbeams are trained to do his painting; the lightning leaps away to carry his messages; and the earth works with ceaseless activity to bring forth whatever can minister to his gratification.

* * * * *

Let your imaginations carry you back to the time when agriculture was in its infancy—before the earliest dawn of Greek civilization. In those days men depended principally upon the chase for a living. They ate the flesh, and clothed themselves with the skins of wild beasts. Fruits and other vegetables of spontaneous growth added to their luxuries in summer. They were not long in discovering one fundamental law of nature, namely: that seeds deposited in the ground would grow, and produce similar seeds in larger quantities. But they knew nothing of the difference between one soil and another. They preferred the poorest, because it was easiest cleared and lying higher up on the ridges, it needed no draining. Here they made holes in the ground with sticks, and dropped the seeds a few inches below the surface. The rest was left to nature. If such cultivation gave them a two or three fold crop, they were lucky. It happened much oftener that its growth was choked with weeds, or that it met with some other evil chance, by which

"The green corn perished e're his youth attained a beard."

The planting and gathering were left to women and children; the men despised such work, as being inconsistent with their honor and dignity. Hunting and fighting were the employments in which they found pleasure and glory, as well as food and clothing. But there was one man among them more thoughtful and observant than all the rest. He had watched the unfolding vegetation, from the sprouting of the seed to the maturity of the fruit, with a keen perception of the whole marvelous and beautiful process; and he devoted his attention to the rearing of useful grains, with a pleasure, which he had never felt in the excitement of the chase. He discovered the proper season for planting; he noticed that weeds were unfriendly to the growth of his crops; he found that mixing certain substances, such as ashes and decomposed leaves, with the soil, would increase its productiveness; he learned that stirring the ground about the roots of a plant would make it thrive more rapidly; he even got himself a kind of hoe made, by some cunning worker in iron. Here was a philosopher, whose intellectual stature rose high above that of his fellows. Being a patriot also, and willing to do good for his countrymen, he conceived the thought of persuading them to quit hunting and win a surer living from the earth. At his request, they assembled under the spreading oaks, to hear his plans; and this was the first agricultural meeting—I will not say the first on record, for I do not know that it is recorded—but certainly the earliest you ever heard of. The sage unfolded his new science to them, proving, as he went along by the facts of his own experience. The chase, he said, was a precarious business at best, while agriculture would be a sure and steadfast reliance. He told them, that he himself, with the moderate labor of his own hands, had gained in a single season, what would sustain life longer and better, than all the spoils taken, during the same time, by the best ten of their hunters. This, he asserted, was true of an ordinary season, but sometimes the game disappeared entirely. His voice grew deeper, and its tones had a melancholy impressiveness, as he described the sufferings endured by them all, when they, the strong sons of the wilderness, with their wives and children, became the prey of gaunt famine and wide wasting pestilence. He concluded by promising, that long lives of wealth and contentment should repay them for a general devotion of their labor to the cultivation of the earth.

No cheers followed the speech, but on the contrary, hoarse murmurs of disapprobation came up from the multitude, swelling by degrees into loud opposition. The new measure was attacked with all those shallow sophistries—these miserable fallacies so shallow and truthless—with which conservatism arms her ignorant votaries. That solitary defender of truth was overwhelmed by the sort of arguments, which are sometimes reproduced in modern political meetings and legislative bodies. Some accused him of a deep design upon their liberties. Some declared that he had opposed the nation in its last quarrel, and was, in fact, no better than a traitor. One set knew him to be unsound in his religious faith, and brought all the prejudices of superstition into the field against him. Others charged down upon him with a whole army of "illustrious ancestors," whose opinions, they said, were not like his. Others still there were, who could see no objection to the man or the measure, but this was not the proper occasion—the time was out of joint. A portion of the crowd saw, in their much wisdom, that to quit hunting would enervate their frames and make them a race of cowards. Most powerful of all, and most profoundly wise in their own conceit, was the party who declared they would never consent to the enormous sacrifice of property required by such an innovation. They had invested a large capital in bows, and arrows, and spears, and traps, and knives; and these would all be useless if their future occupation was to consist in tilling the ground. There was one mighty man there; a blacksmith, who had gained great consequence, and earned innumerable skins, by making the weapons which were used in killing the beasts of the forest. He thought his *craft* was in danger, and he objected to Agriculture, for the same reason that Demetrius, the silversmith, afterwards opposed Christianity. He put an end to all discussion, by uttering a catchword, with just enough of no meaning in it to make his friends unanimous. He lifted up his big voice, and cried out "Great is Diana the Goddess of the bow, and the Patroness of hunters." The whole assembly in full chorus echoed the cry—and there was a great uproar. They would have stoned their prophet; for the sight of his meek countenance and the recollection of his blameless life exasperated their wrath; but no one proposed it, and he was suffered to escape.

The primitive apostle of agricultural science was defeated. He died in the melancholy belief, that his people were destined to remain forever in barbarism. But not so. A truth had been spoken; and truth can never die. It had gone down in the shock of the first encounter with falsehood, but it was not crushed. Agriculture found an efficient champion where such a thing could least have been expected. At the great meeting under the trees, there was a little girl, whose parents had both died of starvation, and her two brothers had perished in the pestilence, which followed the famine. Hunger and its concomitants had carried away every relative she ever had. She was gifted by nature with a quick intellect and a kind heart; and her lonely condition had made her thoughtful and wise above her years. She listened to the words of the sage with beaming eye, and flushed cheek, and lips parted in breathless interest. When she heard a proposal to furnish bread in abundance—bread at all times—bread which would always stay the ravages of famine, whether game was plenty or scarce—it roused every

faculty of her mind. She knew the whole subject by heart, as soon as she heard it explained. Henceforth she had neither eye nor ear for anything else. She gave herself up entirely to the one great task of spreading agricultural science. Every day addded to her own knowledge, and to the irresistible power with which she impressed it on other minds. She grew up with a lustrous beauty, which seemed more than mortal. Her elocution, though gentle and persuasive, had all the vigor which springs from enthusiasm; She swayed those rude men with an influence they had never felt before. One after the other, her countrymen threw away their bows and spears, and, with hoes in their hands, came and placed themselves under her tutelage. What she was unable to teach, they learned from their own experiences mutually communicated. Soon all the hill sides were covered with rich crops of waving grain, and the heavy timber began to disappear from the bottom lands. Stately houses took the place of the mean hovels which the hunters had occupied. All the beasts of the forest, which could be made useful to man, were domesticated. The wild boar was captured and tamed for the sake of his flesh; the sheep submitted to the shearer; the ox bowed his shoulder to the yoke: and the mouth of the horse became acquainted with the bridle bit. The wild fruits were transplanted into gardens and orchards, and were totally changed under the influence of a careful culture. The sour grape became a delicate luxury; the useless crab grew to be an apple; the sloe expanded into a delicious plum; and a nameless fruit, resembling the bitter almond, swelled out into a peach, with surpassing richness of flavor. New implements of husbandry were successively invented. The plough, the harrow, the sickle and the scythe, each had its share in making the general prosperity greater.

Agriculture once established, became the parent of other arts. Navigation, commerce and manufactures added to their wealth. Cities rose up, filled with a refined population. The nation grew strong and powerful, and spread its dominion far and wide. The name of a Greek became synonymous with all that was great among men. Their descendants were painters and sculptors, who furnished the models for every succeeding generation; poets, whose sublime strains have been feebly imitated ever since; philosophers and statesmen, whose words of wisdom will be heard with reverence to the end of time; warriors, whose deeds made Thermopylæ and Marathon the watchworks of the free; and orators,

"Who wielded the fierce democratic at will,
Shook the arsenal, and fulmined over Gerece."

They were not unmindful of the benefactress, who had given the first impulse to their high career. They assigned her a celestial parentage. Temples were erected to honor her. They believed, that though her home had long been fixed among the stars, she still presided over their affairs and pleaded their cause in the Senate of the Gods. They painted her figure, as they imagined it, all radiant with supernatural beauty—her hand bearing the horn of plenty, and her head garlanded with ears of wheat. They worshiped her with all the fervor of idolatrous veneration, and for a long lapse of centuries they knew not, that the labors of the farm were blessed and rewarded by a greater deity than CERES. To this day, we keep her memory alive by calling the most useful of agricultural products after her name—the *cereal* grains.

The Best Feed For Milch Cows.

A correspondent of the Michigan Farmer recommends the white flat turnip as the best for milch cows. He adds: —Some perhaps, will object to the turnip, because it will affect the taste of the milk and butter. So it does if fed raw; this can be avoided by boiling.—For each cow boil half a bushel of turnips soft; while hot add five or six quarts of shorts, which will swell and you will get the full worth of it. A mess like this fed to a cow once a day, will produce more milk of a good quality, than any other feed at the same cost. Turnips fed in this way do not taint either the milk or the butter. One thing in favor of turnips as feed for cows, is, they can be sown in August, or as late as the first of September. I sowed some as late as September last year, which were very fine. Turnips are also very profitable feed for pigs, when boiled in the same way as for cows.

The Lawton Blackberry.

We gave on page 81 of the last volume, an engraving and description of this popular fruit. As many of our readers may desire to plant a few stalks, we have procured from Mr. Lawton the following directions:

"Have your ground ready, and do not unpack them so as to expose the roots to the open air for more than a few minutes; plant them as soon as possible; cover the roots with light litter the first season so as to keep off the effect of the hard frost as long as possible—when firmly rooted they are so hardy as to require no particular care summer or winter, and I made the latter suggestion as a matter of prudence—I seldom lose a plant in autumn or spring planting, and have used no great care in removing them, only the precaution of covering the roots."

The Preservation of Fruit.

Now that farmers have become aroused to the profits of fruit culture and planting of orchards, the following remarks by M. P. Wilder, at the late meeting of the Pomological Society, on the proper maturing and preservation of fruits will attract attention.

It is a subject much misunderstood, and the theory that by the natural process of ripening on the tree, nature acts for the benefit of the *seed*, will commend itself to all, except perhaps the authors of the celebrated report of the Massachusetts Horticultural Society, who think *nature* should not be interfered with, but left to herself.

To them, perhaps, the sight of a rotten pear or apple dangling from the limbs may be as "beautiful an ornament" as Mosses and Lichens on the trunk. He says:

There is but one other topic to which I will advert—*the preservation and ripening of fruit.*

Much progress has been made in this art within a few years, and important results have been attained. This principle has been settled that the ripening process cannot be controlled. Autumnal fruits have been kept and exhibited the succeeding spring. We have seen the Seckel, Bartlett, and Louise bonne de Jersey pears, in perfection in January, and even later. The maturity of fruits depends on saccharine fermentation. This is followed by other fermentations, as the vinous and acetous. To prevent these, and preserve fruit in all its beauty, freshness and flavor, the temperature must be uniform and kept below the degree at which the fermentation or the ripening process commences. Our remarks, like our experience, have special regard to the apple and the pear, though the principle is doubtless susceptible of a more extensive application. Fruits, designed to be kept for a considerable time, should be gathered with great care some days before the ripening process commences, especially summer pears. A summer pear ripened on the tree is generally inferior. In respect to the latter, Mr. Barry, Editor of the Horticulturist, has so aptly expressed my own sentiments, that I use his language. "The process of ripening on the tree, which is the natural one, seems to act upon

the fruit for the benefit of the seed, as it tends to the formation of woody fibre and farina. When the fruit is removed from the tree, at the very commencement of ripening, and placed in a still atmosphere, the natural process seems to be counteracted, and sugar and juice are elaborated instead of fibre and farina. Thus, pears which become mealy and rotten at the core when left on the tree to ripen, become juicy, melting, and delicious when ripened in the house." Various fruit houses have been built both in this country and in Europe; and experience shows that their object can be attained only by a perfect control of the temperature, moisture and light. Hence, they must be cool, with non-conducting walls, or with exterior and interior walls, or a room within a room. Thus the external atmosphere, which either starts the saccharine fermentation or conveys the agents which produce it, can be admitted or excluded at pleasure. It is possible, however, to preserve the temperature at so low a degree and for so long a time as to destroy, especially with some varieties of the pear, the vitality, and therefore all power ever to resume the ripening process. Experience proves that for the common varieties of the apple and pear, about forty degrees of Farenheit is the temperature best suited to hold this process in equilibrium.

The proper *maturing* of fruit thus preserved demands skill and science. Different varieties require different degrees of moisture and heat, according to the firmness of the skin, the texture of the flesh, and the natural activity of the juices. Thus, some varieties of the pear will ripen at a low temperature and in a comparatively dry atmosphere; while others, as the Easter Beurre, are improved by a warm and humid air.

Some varieties of the pear, ripening with difficulty, and formerly esteemed only second rate, are now pronounced of excellent quality, because the art of maturing them is better understood.

But so many experiments have been tried, or are in progress, and so much has been written on this branch of our subject, that I need not enlarge except to say that the art of preserving and ripening fruit in perfection, involves so much scientific knowledge as to require great attention and care; and until its laws are more fully developed, must be attended with considerable difficulty. I therefore commend it to your special attention, as second in importance only to the raising of new varieties.

Hoof Bound.

The following are the directions of Dr. Dadd for this disease:—In all cases we must endeavor to give the frog a bearing on the ground; and in order to do this the shoe ought to be removed. A dry, brittle, and contracted hoof may be improved by repeated poulticing with soft soap and rye meal, applied cold. So soon as the hoof softens, let it be dressed, night and morning, with turpentine, linseed oil, and powdered charcoal, equal parts. Yet, after all, a run at grass in a soft pasture, the animal having nothing more than *tips* on his feet, is the best treatment. A very popular notion exists, that cow manure has a wonderful effect on a contracted hoof; but it is the candid opinion of the author, and no doubt the reader will coincide, that filth and dirt of every kind are unfavorable to healthy action. Such remedy, aside from its objection on the score of decency, savors too much of by-gone days, when live eels were sent on an errand down horse's throats to unravel their intestines. If any benefit belongs to such an objectionable application, it is due to the property it possesses of retaining moisture; therefore cold poultices and water are far superior. Clay and moist earth, placed in the stall for the horse to stand on, are far inferior to a stuffing of wet oakum, which can be removed at pleasure. In order to keep it in contact with the sole, we have only to insinuate two strips of wood between the sole and shoe; one running lengthwise and the other crosswise of the foot. It affords considerable pressure to the foot, is cooling and cleanly, and is far superior to the above articles.

Address of Samuel John, Esq.

Mr. J. L. Darlington:—The following pertinent remarks were made by Samuel John, Esq., when he was declared unanimously elected president of the Northumberland county agricultural society, and conducted to the chair. You will gratify your numerous readers in this section of country, by giving them a place in the Farm Journal.

J. S.

Farmers, Mechanics, and Gentleman, I feel it my duty to say to you that I am not ignorant of the distinguished honor you have shown me in appointing me your president. It is not an office that will yield its occupant dollars and dimes, but it is an honorable and important office, because the farmer's occupation is an honorable one; if there were no other honor attached to it than that of occupying the chair of my illustrious predecesors it would be sufficient to make it desirable. There once sat the gallant and lamented Hunter; the honest and upright Priestly; while the seat has been but recently occupied by the industrious and indefatigable Cameron. The farmer's occupation is as ancient as it is honorable; the father of all living men was a farmer; he was appointed to cultivate the beautiful farm of Eden, laid out and planted by Eternal wisdom; his birth was an honorable one, being created by an Almighty Father.

The agricultural interest of this county requires an impetus to induce the honest and hard working farmer to examine causes and events; and if by our arduous labor we are able to induce any one to raise two blades of grass where only one grew, we have our reward. We greatly err when we say our fathers lived well and died happy, without any of this fuss about book or scientific farming, and we will do so too; the ancients even in the time of Pharaoh, far surpassed us as tillers of the ground, and they were scientific farmers too, they understood the principal of irrigation as a grand auxiliary to the propagation of plants, and I apprehend they practiced it well, or else Joseph would not have been able in seven years, by exacting one-fifth of the corn that grew along the valley of the Nile during that time, to swell the amount so that no man could number the bushels—a sufficiency to feed millions for years.

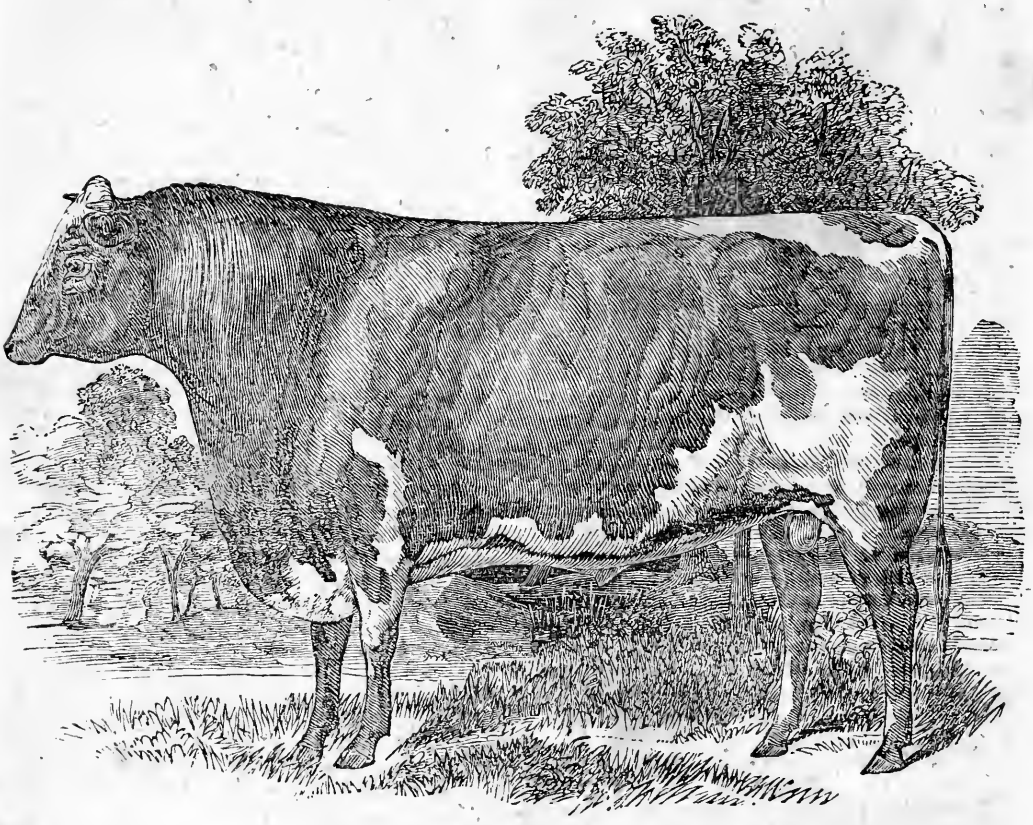
The farmer's latitude for information is so extensive and his fields for moral improvement are so wide, that it can seldom fail to produce serious impressions on a reflective mind; our divine master while on earth frequently used the farmer as the basis of his parables. "The kingdom of heaven is like unto a householder who went out to hire hands to labor in his field." "The kingdom of heaven is like unto a man who soweth good seed in his field." It is also compared to "a husbandman who went into a far country, &c.," and many other paragraphs equally strong may be gathered from the pages of sacred writ, to show that the farmer always has been held up as a beacon-light to moralize the world. When we see the arts and sciences advancing around us, the grain drills, the grain reapers, and threshers, all got up to alleviate the labor of the husbandman, and hear the shrill whistle of the iron-horse as he puffs along the plain, pulling her tremenduous load with the speed of the wind; when we see men talking together at a distance of thousands of miles with ease and facility; when we see all of this and more, we are constrained to think that if Solomon lived in these days he would not say "there is nothing

new under the sun." Let the worthy farmer and mechanic be stimulated at what he sees around us; let him be emulated thereby and endeavor to advance his calling. The Honorable judge, the lawyer, the doctor and the divine, all take an interest in our welfare; the Government itself begins to shake off its lethargic stupor, and seems willing to grant a small pittance to the aid of the scientific and practical farmer.

Cheap Kindlings.

The Genesee Farmer gives the following directions for making a cheap and serviceable kindling for wood fires:

Take a quart of tar and three pounds of rosin, melt them, bring to a cooling temperature, mix with as much saw-dust, with a little charcoal added, as can be worked in; spread out while hot upon a board; when cold, break up into lumps of the size of a large hickory nut, and you have at a small expense, kindling material enough for a household for one year. They will easily ignite from a match, and burn with a strong blaze, long enough to start any wood that is fit to burn.



THOROUGH BRED DURHAM BULL 1ST LORD BARRINGTON.

This animal was bred by Thomas P. Remington, Esq., of Philadelphia, and is now owned by Dennis Kelly, Esq., of Delaware county. Lord Barrington 1st took the first premium at the late Pennsylvania State Exhibition for the best bull between two and three years old. He is one of the best animals in the State, and closely descended, as will be perceived, from the celebrated Duchess blood, now so much sought for. In length and depth of carcass, great width of loin and back, and especially in being well filled up behind the shoulders, he is superior to most others. His stock from the right kind of cows, we should suppose, would be much sought for. He is highly creditable to his breeder and present owner.

He was calved January 18th, 1852; color, red and white; dam, Lady Barrington 4th by Bates Bull Meteor: sire, Fortune by Bates Bull Symmetry; gr. dam, Lady Barrington 3d by Duchess Bull Cleveland Lad, No. 3407, E. H. B.; gr. g. dam, Lady Barrington 2d by Duchess Bull Belvidere, 1706, E. H. B.: gr. gr. g. dam, Lady Barrington 1st by a son of Mr. Mason's Herdsman, 304, E. H. B.; gr. gr. gr. g. dam, Young Alicia by Wonderful, 700, E. H. B.; gr. gr. gr. gr. g. dam, Old Alicia by Alfred: gr. gr. gr. gr. gr. g. dam by Young Favorite, son of Favorite, 252, E. H. B., &c.

Meteor was by imported Duke of Wellington, bred by the late Thomas Bates, Esq., of Kirkleavington, England; got by Duchess Bull Short-Tail, 2621, E. H. B.; dam, Oxford. Oxford obtained the first prize for the best Short-Horned cow, open to all England, in July, 1839, at the Royal Agricultural Society's Exhibition. The dam of Meteor was imported Duchess, also bred by the late Thomas Bates, Esq.

Ruby, the dam of Fortune, was awarded the first prize in 1850 by the New York State Agricultural Society in class of milch cows, being a thorough bred improved

Short-Horn. She gave in eighty days, on grass feed only, over two tons of milk, and made from June 10th to the 20th, and from August 10th to the 20th, over forty pounds of butter. The dam of Ruby was Willy 2d, see American Herd Book, 104.

Plowing in Guano.

A correspondent of the *Country Gentleman*, in reply to an inquiry as to the best method of applying guano on clay land says:

I have tried it on clay land that had been in grass for five years. On one half the field I plowed it to the depth of seven inches, and on the other half harrowed it in, and planted it all to corn, and staked off an equal number of hills from each part. It all came up equally well, but by the early part of summer there was a marked difference in the two parts of the field, which continued throughout the season; and upon husking, that which had been plowed in [and staked off upon planting,] produced nine bushels, while that which had been harrowed in, produced but five bushels, showing the advantage of plowing it in, even in heavy clay soil. The soil was a slate and the amount used about two hundred lbs. to the acre.

Standard Weight of Grain and Seeds.

For the convenience of our readers, and in answer to numerous enquiries, we annex below the standard weight of numerous articles of Farm produce, which in the intercourse of trade, it is of importance to have well understood both by buyers and sellers.

Wheat,	60 lbs.
Corn, (shelled,)	56 "
" (on cob,)	70 "
Barley,	48 "
Oats,	35 "
Buckwheat,	42 "
Clover seed, (Red,)	64 "
Green grass,	10 "
Timothy,	42 "
Blue grass,	10 "
Hemp,	44 "
Flax seed,	56 "
Beans,	60 "
" (Castor,)	46 "
Potatoes,	60 "

Work for the Month.

FARM:—Stock demands the careful attention of farmers at this season. They should be kept thriving—not barely living. They should have shelter to protect them from the inclemency of the weather. Cows should be kept housed at night in warm, well ventilated stables. All stables should be frequently cleaned, daily if possible. The curry-comb and card should be used freely. Milch cows, (and other cattle when practicable) should have a daily supply of succulent food such as roots, cabbage, &c., with a little meal. Do not allow any stock to suffer for want of food or water. Keep a lump of rock salt where they can lick it at pleasure.

Do what hauling circumstances will permit now, and you will have so much less to do in the busy season, such as lime and other fertilizers, wood, stone, &c. It is better to work the teams in pleasant weather than to permit them to stand idle all winter. Sheep should have shedding not stables to run under to protect them from the rains, and should be fed a little oats or corn daily, and when necessary hay. When the ground is free from snow they generally are able to gain most of their nourishment from the pasture field. Swine should have good shelter, but not too "closely housed." Poultry should have access to a warm house, with some refuse meat, sand, ashes and lime always at hand. They make a rich return for this little attention.

FRUIT ORCHARD:—Remove all long grass and rubbish from trees, which attract mice. Bank up earth as before recommended. Arrange plan of orchard and fruit garden for spring planting; select at this leisure season, from fruit books and other sources, what varieties will probably be wanted; provide fencing materials, and have them ready for early use; cut down worn out and decayed apple trees; provide stakes and tallies for trees; plant the orchard on paper in winter, at leisure, and thus expedite business in the spring; spread lime over old orchards; moderate pruning may be attended in this month; dig in guano or short manure, to promote vigorous growth.

VEGETABLE GARDEN:—Attend to directions of last month; keep a close watch on frames, so as not to force into growth or injure by exposure; attend to composts and procure materials for forcing beds in spring; repair sash, and make mats of straw for covering in cold nights; provide a full supply of bean poles, pea sticks, &c.; procure what gardening tools may be wanted, and anticipate the working season.

FLOWER GARDEN:—If the hints given out the previous month have been attended to, there will be little to do this month in the flower garden. Protection should be given at once to all tender roses and shrubs requiring it. Plants in windows should be carefully watched, and avoid too *frequent* watering. A good watering when necessary is much better than constant wetting. That pest, the Green Fly, can be kept under by occasionally syringing or immersing in tobacco water made by steeping tobacco stems in water for twenty four hours, or what is better of water of aloes.

Orange and Lemon trees in cellar, should have fresh air admitted when weather is open; water only when dry. Plants in cold frame should have air every fine day. They are very liable to be injured by excess of moisture.

Too Much Land.

MR. DARLINGTON:—There are few farmers, I apprehend, who will agree with me when I say that in nine cases out of ten, they have too much land. A farm of one hundred or one hundred and fifty acres is considered of a moderate size, and so *comparatively* it is; but there are few tracts of these dimensions, unless in the grazing districts, that are thoroughly cultivated. By thoroughly cultivated, I mean, made to produce their maximum quantity of profitable produce.

Thirty years ago, farms were generally on an average double the size of these in our day; and thirty years ago fifty bushels of corn per acre, was considered a large yield. Now, either the farm or the farming is indifferent

that will not produce double that amount per acre. Thirty years ago there was more rye grown than wheat in this region, because the land would not produce wheat without manuring, and enough manure for all the winter grain could not be got. And even of the comparatively little wheat sown, a comparatively less quantity was raised than at present, for the reason, that the farming was less carefully performed.

I know a "homestead" in this county comprising some sixty acres, which is a part of a large tract taken up by one of my ancestors; the remainder going to different branches of the family, and sometimes sold to other parties. Now from the papers of my father and grandfather, I learn that the entire merchantable produce of the original tract, later of one third, and still later of one half of this one third, was far less than the present proprietor from the sixty acres. In fact strange as it may seem, the marketable produce increased with each division, and I have no doubt, that if another division was to take place the thirty acres would nett more than the sixty now do.

What is necessary to make small tracts renumerative, is to enrich them to the fullest extent to make "Each rood of ground maintain a man," and to produce those articles for which rich ground is best calculated.

I am aware that these observations apply with greater force to land in the neighborhood of large towns than at a distance from a good home market, but their truth will be evident on reflection in places at a greater distance. WILLIAM ZELL.

Delaware Co, 11th Mo, 1854.

For the Farm Journal.

An Interesting Inquiry.

MR. EDITOR.—Will you permit me through the medium of your columns to state a case of particular interest to myself, in the hope it may elicit from yourselves editorially or from some of your scientific correspondents a satisfactory solution. For a number of years past, a part of my farm has almost entirely refused to produce corn: that part most effected, was twenty years ago celebrated for producing a uniformly large crop, say from 50 to 80 bushels per acre, now 10 bushels and often less than 5 bushels is the common yield. Manure and lime have been used liberally and I reap most bountiful crops of wheat. The grass crop produces according to the season from $1\frac{1}{2}$ to $2\frac{1}{2}$ tons (timothy and clover) per acre.

The soil is a black mould, semi-alluvial, and in a high state of cultivation, potatoes grow luxuriantly.

I had occasion to enlarge one of my fields, thus effectually removing a partition fence, and adding several acres of old pasture that had *never* previously been planted with corn, the whole was in May last planted with corn; now mark the result; on the old pasture I gathered 5 bushels of ears from one shock of 48 hills, immediately adjoining on the sick part it required 4 shocks of equal size to make 1 bushel, the hills being 5 feet apart each way.

My neighbor on the adjoining farm is in a similar fix, he however applied to a celebrated professor of chemistry in a neighboring city, and furnished him with a portion of soil to be analyzed, the worthy professor prescribed *lime and guano* and took a $20 bill.

The corn usually looks right until about 5 ft high, the leaves then become striped with yellow, and the bark or outer covering of the root, appear to be decayed and readily slips off. C. W. B.

Camden Co. N. J.

Stock Breeding---Deteriorating Effects of Contact with Inferior Animals.

FRIEND DARLINGTON:—In compliance with a promise made some months since, I will give you a suggestion in regard to sheep breeding, hoping it may bring out some one better qualified to discuss the subject and better acquainted with stock breeding, or with the effects of which I shall speak. My opinion is that sheep cannot be bred in their purity if allowed to run with other kinds during pregnancy. For example, take a lot of pure bred Southdown ewes, and let them run with a lot of common sheep during the period alluded to, without allowing any connection between them, and in the course of a few generations they will undoubtedly degenerate, and assimilate to their associates, the common stock. I think I have seen similar effects from a similar cause, and will mention a case which occurred in my neighborhood, a few years ago, in regard to deformed colts. A poor man owned and kept in his lots, or about the roads, a poor old mare with a nose on one side of her head, and ears drooping something like the English rabbit's. Three or four of his neighbors had mares with foal pasturing in fields near or adjoining this man's lot, so as to be frequently in sight of and in contact with this hideous looking animal. The result was that all had colts so deformed and so exactly resembling the old mare as to head, nose and ears, that two of my neighbors killed them. One of the colts, which I frequently saw, that was not quite so bad, and was raised, had its nose considerably to one side of its face, and the owner kept its ears tied up while rearing it. This man's neighbors had much better make him a present of a good looking horse and put the old thing out of the way, for she was a public nuisance. Respectfully, THOMAS WOOD.

Mount Airy, 12th mo. 7th, 1854.

Super-phosphate of Lime for Corn.

MR. DARLINGTON:—Allow me through the columns of your valuable journal to call the attention of farmers to the value of super-phosphate of lime as a manure for corn. It is my impression that the farmer cannot use any manure that will so amply repay him for the money and labor expended. I will give you the result of an experiment with super-phosphate the past season. I plowed up about fifteen acres of sward which was manured broad cast with stable manure, say twenty five loads to the acre; part of it was manured in the hill with a mixture of soil, stable and hen manure, and part with unleached ashes and plaster; and about one fourth of the field with super phosphate of lime (Prof. Mapes' improved, purchased of P. Morris & Co.,) about one gill of which per hill was applied in the hill at the time of planting. I took notice as soon as the corn came up that the part of the field on which I had applied the super-phosphate, was of a brighter green and grew decidedly more rapid and when we came to husk the corn it yielded from ten to fifteen per cent more than the other portion of the field. I entered my crop for the premiums offered by our

county society, and when the committee came to view it they were perfectly satisfied of the marked difference. The part having super-phosphate applied being heavier and better eared. If this statement should induce one single farmer to use this manure and thereby increase the yield on his land, I shall be amply repaid for this brief statement. GEORGE DRAYTON.

Runnimede Farm, Delaware Co., Pa., Dec., 11th, 1854.

Just Principles of Breeding.

MR. DARLINGTON:—With the exception of a few professional breeders, but little attention is paid, in this county to breeding. Its plainest principles are almost entirely disregarded. Breeding "in and in" as it is called or from "near relations" is so common with some kind of stock, as to be almost universal; while old, broken down animals, which are fit for nothing else (and most of all unfit for this) are kept for no other purpose. Has a farmer an old, limping, wheezing mare, too rickety to work, he takes care to get two or three colts from her before sending her to the tanners; has he a herd of cows, the male progeny of one or more of these is yearly raised, to serve, among other, his own daughter, and perhaps granddaughter; has he a flock of sheep, five or six years is generally sufficient to render it worthless; has he a lot of hogs, they are probably the unmixed descendants of a pair he had ten years before. All this most of them know, or should know is wrong. It is against the laws of nature for an old, broken down mare, to produce a healthy offspring; nor can the continuous offspring of near connections be expected to be robust and strong. The size and beauty will be diminished while the liability to disease will be increased. These facts are so well established that it would be folly to cite cases in their proof.

To every farmer who has occasion to raise a colt, a calf, a lamb or a pig, or indeed any animal, I would say, first; see that the intended parents are healthy, and neither very young nor in the decline of life, second; that they are not near relations, third; that the intended dam be "well used" after conception. These are the first requisites.

The careful farmer will also be anxious to breed so as to obtain secular points in his stock. This he can generally attain by the selection of stock to breed from. He can at leats approximate to the size or figure sought and may attain it in time by careful breeding. J. G. CROSS.

Montgomery co., Dec., 1854

For the Farm Journal.

Wanted---Seeds of Plants.

MR. J. L. DARLINGTON:—Having for some time been trying without success to obtain seeds of the following named plants, which, though some of them may not be new are not cultivated in this section of country so far as I am able to learn. I have therefore been induced to ask, if either yourselves or any of your numerous exchanges or subscribers could inform me of the whereabouts they can be obtained, if so I shall feel myself much obliged for their information. HORTICOLA.

Hibiscus Sabdariffa; This plant is largely cultivated in the West Indies and some parts of Europe, under the name of French Sorrel, where the calyx and large capsules are used for making a cooling and aciduous beverage, and prepared with sugar they are said to rival the cranberry in taste. The plant is nearly related to Okra (Hibiscus esculenta) and may be cultivated in the same way.

Oxalis crenata; KENRICK says this is a perrennial, ornamental plant discovered by Douglas in Chili. The roots or tubers are produced in clusters, their taste when boiled somewhat resembles a chesnut. They are raised from the tubers and being extraordinarly productive, they are as easily cultivated as the potatoe, but decidedly superior in flavor; they require a rich soil and like the potatoe may be stored during the winter in cellars.

Oregon Pea; I do not know the botanical name of this plant, but probably it is not a Pisum, as it is said to be a stiff, upright, branching plant, and very prolific when thinly planted, which it should be when seeds are the object, which, when green are said to be an excellent table vegetable, and when dry are valuable for horses, swine, and poultry, which last would be something in these shanghai days of ours When thickly sown it makes a good fodder plant:

Cicer arietinum, Chick Pea; This is the garbanza of the Spaniards and Poischiche of the French. EMERSON says, it grows well in the Middle states. In the West Indies and in every part of America which is settled by the Spaniards, they have always made the culture of the garbanza a primary object; it is singular it has not become better known and appreciated in the United States. Trials made with it in the vicinity of Dover, Delaware, proved very successful. It is considered the most delicious vegetable of its class ever placed on the table when served in the manner of green peas. It does not yield so abundantly as the common pea but it is decidedly superior both in richness and flavor; and not being the prey of insects they will keep sound and sweet for years. They grow best in a rich sandy loam, and not being a trailing vine, requires no sticks, the plant growing only about 18 or 20 inches high and very branching.

Homespun Gossipping.

To the Printer of the Farm Journal:—Don't be alarmed, Mr. Printer, at the formidable appearance of a long gossiping letter from a hard-working old farmer. If you can't puzzle out my rheumatic looking quill-tracks, why you may light your pipe with the paper, or you can send it to the printer of the Examiner at Lancaster, he will spell them out for you without missing a word. Years ago I used to have many a long chat with the Examiner, but my rheumatic old fingers got rebellious at last and put a stop to my gossipings with him, and I have had so little to do with pen and ink ever since, that I calculate it will bother you to cypher out my scratchings, even with the help of all the dictionaries about your establishment. But, Mr. Printer, I have intended for a long time to have a talk with you Farm Journal folks, so this morning I said to my good old wife, (I never do anything without first consulting my wife, for after forty years experience I have discovered that if a man wants to keep a clear conscience and get ahead in the world he must make it a matter of business to consult his wife,) so says I, "Becky, I believe I will write a letter to the printer of the Farm Journal." "Bless my heart, Homespun, (Becky always calls me by my last name) bless my heart," says she, "what has put that notion in your head?" "Why I must send him my dollar for the next volume," I replied, "and I may as well tell him what we think of his Journal at Homespun Hall." "Well," says Becky, "You used to tell the printer of the Examiner so many things about housekeeping and our way of managing here, that I really felt ashamed to call at his office for our paper when I went to market, and now, if you are going to gossip about us to the printer of the Farm Journal, I shall never show my face in West Chester, and you know very well you promised to take me over there next spring to replenish my stock of plants and roses at Morris's nursery." "Well, my good old wife," I replied, "I scarcely ever pick up a newspaper in which somebody is not boasting of his fine stock, his large crops, or some such thing; and as it is my good fortune to have a model of a wife, I don't see why I can't keep myself in a good humor with the world by letting the world

into the secret of my good fortune. I am very sure that a good wife is quite as useful to a farmer as a good horse; but I am *not* sure that a good wife for a farmer won't be a scarce article after while—the present generation of girls are getting so many ridiculous notions in their heads. Therefore if I can encourage the growth of good wives by telling the printer of the farm journal about mine, I shall take as much credit to myself as has been proclaimed due to the man that makes two blades of grass grow where but one grew before."

Becky's reply to my long speech, was cut short by one of the girls coming from the kitchen to invite her mother out to taste the mince-meat to see if it was spiced according to her notion, as a failure in the mince pies for our Christmas dinner would be a blunder, yet to be recorded in the housekeeping history of Homespun Hall. But, Mr. Printer, while Becky is out in the kitchen and the coast is clear for a gossip, I will chat awhile with you about the Farm Journal. From the very first copy printed by my old friend Col. Spangler, down to the present time, I have been its constant reader, and, though I can boast of an apprenticeship of more than forty years on a farm, I do not remember to have read a single number of the Farm Journal, without getting some direct practical information, or more expanded views of the dignity and greatness of the farmer's calling, that more than repaid me my subscription for the whole year. I have taken two or three good Agricultural papers for a great while, and I frequently noticed the salutary influence which that class of reading carries into a family of children For a long time after the arrival of these papers, their contents are the every day topics of discussion at the table and the fireside. The housekeeping items are pounced upon by Becky and the girls, who approve or condemn as they test the merits or demerits of the various matters in their department, —while the boys take hold of such subjects as manures, improved implements, &c., and there is no end to the experiments set afloat by reading the Farm Journal and kindred works. The farmer's family, I am sure, can not keep your Journal lying upon the table of the sitting room, without having a spirit of enquiry stirred up in the household, and becoming more intelligent and better fitted to be employed in one of the most ennobling vocations of man, Farming. I have long since satisfied myself that the true dignity, the real greatness of our calling, has never been appreciated by the great mass of farmers. The idea is entirely too prevalent, all the world over, that any stupid country bumpkin will make a good farmer; hence if one of our sons shows an inclination for books, or exhibits intellect beyond driving a yoke of oxen, he is packed off to college to be educated for a profession, while his less favored brother is limited to the winter sessions of the public school, and kept the remainder of the year at hard work on the farm, without, perhaps, even the privilege of reading the Farm Journal to remove the mists of ignorance and prejudice from his mind. His "thirst for knowledge" therefore, can readily be slaked in the pages of a Dutch almanac, studying out the right "sign" to plant radishes or set a worm fence. Is it any wonder that so many slurs are cast at us "Country Haw-Bucks?" I am satisfied Mr. Printer, from personal observation, that quite a respectable doctor or lawyer *can* be made out of a natural born fool, if he has good clothes and plenty of assurance, but a good farmer can never be manufactured out of any such material. Hence the city merchant makes a woful mistake when he sends his son to the country "to learn to be a farmer" because he is not sharp enough to drive a good bargain behind the counter; and it is about time, in my opinion, that all the fools in the world were put to some other business than farming, for it is the last business that "will pay," or become respectable, under the management of any such slack-twisted specimens of humanity.

Well, really, Mr. Printer, my paper is full before I have had half of my talk out,—but if you don't get out of patience puzzling over my long yarns, and would like to hear once in a while how we farmers in the Pequa valley manage to get through the world, why. you will be likely to hear from me again. Yours to serve,

HENRY HOMESPUN.

HOMESPUN HALL, Lancaster co., Dec. 17th, 1854.

Extracts from an Address Delivered by C. P. Holcomb Esq., before the Montgomery County (Maryland) Agricultural Society.

The permanent wealth of the country undoubtedly consists in the landed estate of the country. It is a safe fund for those to possess who make the acquisition, and it is a safe fund for those to hold who inherit the property so acquired; while that class whose cupidity induces them to seek the highest paying stocks, may literally be said to "toil for heirs we know not who."

For some reasons already assigned, and for may others that might be assigned, the landed class is undoubtedly to constitute the first class in American society. They will be more homogenous, constituting a distinct type. They will be highly educated; the increasing wealth of the landed proprietors will justify this. An elevated moral tone, a gentle and high-bred courtesy should distinguish them, and make them fit representatives of the best American society. Where, as in our cities, fashion is allowed to govern, and without much reference to the antecedents of the party, admit, for most part, such as can boast a palatial residence, a splendid equipage, and can afford to give elegant entertainments; such a circle, however elevated the character and refinement of a portion of it may be, can never be considered, as a whole, as a polished, high, superior order of society, or be allowed to pass as representing the first class of American society.

Professional life has hitherto been much sought in this country, and the learning and science it has embraced has very properly given its members a high social position. But the facilities to the admission to the professions will lower the standard; it has done so to some extent already, and the same cause has greatly diminished the emoluments of professional life, and the professions will be much less sought hereafter, and agricultural pursuits, by this class, will be much more frequently sought.

Let me not be understood as saying that it will be for the petty distinction of occupying the first place in fashionable society that the landed interest will seek to highly educate their sons and daughters This will follow. But more worthy objects, more enlarged and patriotic views will have reference to the wholesome action of the public mind, to the safe and prosperous existence of our institutions.

* * * * * *

But, to accomplish all these results, one thing is necessary. It is necessary that, in every dwelling and farm-house in the land, from one end of the country to the other, that the mother should *train;* ay, and that the father should *train! train! train!* This is the word, if the goal is to be reached. We have formerly trained our horses, trained our dogs, trained our cattle. But a greater race is to come off, we enter our children, our sons and our daughters, for the great sweepstakes over the Union course! Train, then, early. Train late. Train in the nursery; train in the school room; train in the drawing room, and in the field, and train at the altar. Erect your college courses. The farm of Silver Spring, Francis P. Blair, Esq., has exhorted the Congress of the nation, in one of the most argumentative, able

and eloquent appeals ever made to that body in the form of a memorial, exhorted them in the name of Washington, in the name of agriculture, in the name of the American people, to purchase the hallowed and consecrated ground of Mount Vernon, and dedicate it to the cause of the diffusion of agricultural knowledge. And yet Congress pauses. Five millions of agriculturists appeal in vain for so small a boon! Represented through their societies, organized throughout almost every county of the Union, with State associations, and a national association, their annual gatherings already constituting the great national gala days of the country, with an agricultural press already read by half a million voters paying the taxes of the country, constituting three-fourths of the people of the country, and Congress gives to agriculture no bureau, no department, no institution of learning; they know us but to tax us. In the moral world a just retribution is visited upon acts of omission, as well as upon acts of commission. The agriculturists have but to combine to punish such slighting of their claims, such overslaughing of of themselves and their interests, and insure more faithful work. The day of reckoning may be at hand.

It must be said, however, in reference to the memorial presented by Mr. Blair and others, for the purchase of Mount Vernon, and the establishment of an agricultural school and model farm, in connection with the Smithsonian Institution, that General Morton, of the Senate's Committee on the subject, made a very able and satisfactory report, and it is to be hoped the measure will be promptly acted on at the approaching session of Congress.

And what a course of training this would afford to the youth of the country! The farmers of my own little State came forward recently to make up a balance of a fund of $50.000 for the establishment of an agricultural department in connection with Delaware College, at Newark. The result is, that on the first day of this month forty-three young gentlemen entered that institution, being twice the average number for the last several years, coming from Georgia, South Carolina, Maine, representing in all ten States.

Maryland, also, moved thereto by one who is always first to move, and the most efficient to move in every good cause connected with agriculture, Charles B. Calvert, Esq., is taking steps towards the establishment of an agricultural college.

Enter, then, your sons. Sound in their ears the exhortation of the father of Daniel Webster to his son, as they were resting from their labors on a hay-cock in the meadow; "Get learning, my son, get learning!" and the father was ready to make any sacrifice to this end.

"I remember," says Webster, "the very hill which we were ascending, through deep snows in a New England sleigh, when my father first made known his purpose of sending me to college. I could not speak. How could he, I thought, with so large a family and in such narrow circumstances, think of incurring so great an expense for me. A warm glow run all over me, and I laid upon my father's shoulder and wept."

Our children will remember the sacrifices we make for them, and bless our memories for it; nay, they will, as they relate such sacrifices, let our voices be heard above our graves.

For the training of our sons, so far as their physical formation is concerned, how favorable are our country homes, and the sports, labors, and exercise they induce! Nor is the scene less favorable to their moral culture, where, remote from temptation, they behold in everything that surrounds them the works of nature,

"And look through nature up to nature's God."

Their intellect, then, must be addressed through the schools and the colleges, while everywhere they must learn the precepts of our blessed religion, and seek to excel in the practice of every Christian virtue. Train, then, you mothers. Train in the name of WASHINGTON! Begin with the anecdote of his childhood, when the father said to the child six years old, after questioning all his servants, "George, did you cut the pear tree in the garden? The reply was, "Father, I can't tell a lie; it was I that did it.

Wheat Trade.

The estimated extra breadth sown in the United Kingdom last season is *one-tenth above the average*, equal to 1,600,000 quarters. On the other hand, there is an excess of produce above the average of from one-sixth to one-eighth. Taking the mean of one-seventh, our account of the present crop and stock stands as follows:

	Quarters.
Average produce,	16,000,000
Excess in breadth one-tenth,	1,600,000
	17,600,000
Excess of produce one-seventh,	2,514,285
Quarters,	20,114,285

If to this we add one million and a half of foreign grain, we have an aggregate of 21,614,285 quarters to meet the consumption of the year, which is estimated at 21,000,000. There will still, however, be the usual stock of the country —now minus 5,000,000 quarters—to be made up. For it would be monstrous to suppose that in a country like this, there should be no stock on hand to fall back upon in an emergency. We shall, therefore, require an importation this year of from four to five million quarters, to place us in the average condition we have hitherto found ourselves in, in regard to the stock of wheat.

We shall next take a look round, and seek how this supply is to be obtained. As we have just stated, any calculations for the future, founded upon the experience of the past, are not to be depended on. With present appearances, it is not at all likely that we shall obtain the usual supply from the Black Sea ports, even if the Danube is free to navigation, and the Crimea and Odessa were in the possession of the allies—as I hope will soon be the case. The consumption and waste of such large armaments, and the disarrangement of commerce and agriculture under the iron rule of war, to say nothing of the probable prohibition of the Czar to his subjects from supplying the allies, or conducting commerce with them from the interior—all these circumstances lead me to think that the quantity of wheat we shall obtain from Southern Russia this season will be small. And with respect to the Danubian Principalities, they have been for twelve months the seat of war, and are still occupied with vast armaments. Under the Russian coercive domination, neither agriculture nor commerce could be conducted with any regularity; and it is probable that not only was a large portion of the land left unsown last autumn, but that much of the growing crop has been destroyed by military operations, and in furnishing the Russian cavalry with green food; for no economic considerations would, by any possibility, enter the mind of a Russian officer. We shall, therefore, have much less grain than usual from the Danubian and other Turkish Black Sea ports, *if we get any at all*, which is very doubtful.

From the Mediterranean ports, with the exception of Egypt and Syria, we shall obtain but little wheat. France and Italy are, for the present, closed against exportation by prohibitory laws. The former country, and the United Kingdom, has exhausted her stocks of old native wheat, and is

compelled to fall at once upon the new crop, which, however good, will not be enough to meet the consumption, and provide the usual reserve stock. It is probable that France and England will continue, as last year, to trade mutually with each other in wheat, according as the market fluctuates. If the price falls here below that in France, the latter will be buyers in our market, and *vice versa*.

With regard to the Baltic and northern countries, with the exception of Russia, the stocks of old wheat are exhausted. Not only had the merchants the stimulus of high prices to induce them to ship to the utmost, but the insecurity, and the uncertainty as to what course the war would take, induced them to export to the last quarter to England and France, as the only countries where it would both be safe, and obtain remunerating prices. The crops in those countries are good, and we shall probably get an average quantity from thence, if no untoward events cause a blockade of the Baltic ports

We now come to the United States of America; and if the accounts of the maize crop—and wheat, also, in some parts of the Union—be correct, their prices will probably be too high this season to allow of their shipping more at any rate than the usual quantity this season. It is stated in the American papers, that the corn crop(maize) is at least one-fourth deficient, which amounts to 125,000,000 bushels, or 15,625,000 quarters. And, with regard to wheat, in some of the Western States, where the largest quantity is raised, the crop is very deficient—in many cases amounting to a total failure. To what extent this may be the case, it is impossible to say; but, taking the deficiency in both crops into account, it will materially affect the export of wheat from the States, and also, probably, draw off a considerable portion of the supplies from Canada, where the crop is represented to be excellent.

Under these circumstances, I estimate supplies for the next year as follows:

	Quarters.
The Northern ports,	1,750,000
Mediterranean,	500,000
Black Sea do,	300,000
United States,	800,000
Canada,	400,000
	3,750,000

This may probably be made up to four millions from the quarters that do not come under the sections above given; but I cannot, by any possibility, see where we can increase that quantity, unless "a sudden transition from war to peace" should restore our northern trade to its accustomed channels. However, with this quantity added to the abundant crop, we shall be able to reinstate the country in nearly the same condition as to stock, that it has usually held; and we need not fear that prices will materially fluctuate throughout the season.—*Mark Lane Express.*

Wheat vs. Cheat.

MR. DARLINGTON:—I stated in my last communication upon this subject, that I did not doubt a word which Mr. Miller had given *as fact*; nor do I now feel disposed in the least, to charge him with "being aware" of propagating an erroneous principal. I only ask permission to lay aside his "*conclusion*" until a more thorough investigation shall have been made of a subject of so much importance to agriculture; and I think the readers of the Farm Journal will agree with me, that the danger of lulling the minds of many into the belief that it is useless to clean their seed, while Nature is so treacherous as annually to produce vast quantities of "cheat wheat" from the seed of good *honest* wheat, will justify this demand; it is to repeat and urge this demand that "I again take so much trouble"

An *error* propagated with the kindest intentions, and even by the most gentle hand, is nevertheless *an error*, and even the more dangerous. Mr. Miller contends that "chess is nothing more nor less than stinted, shriveled, or dwarfish wheat"—and would account for its change from good wheat in the same way that he accounts for "diversity" in the human countenance, or human form." Does he mean that it is a malformation? if so, we need only refer him to what has been said about monsters; the same law of nature holds good in both cases. If not, does he bear in mind that wheat taken as a family (honest wheat I mean, without including "cheat-wheat") comprises perhaps nearly as much variety of "feature, form and complexion" as the human family, and that with all these varieties (spring wheat excepted) under various climates, in various atmospheres, and on various soils, cheat wheat grows and flourishes with but *very little* variation of "feature, form and complexion." I would ask the Philosopher, does cheat spring from one kind of wheat only? does each kind produce its "stinted, shrivelled' dwarfish" grains and its large flourishing, branching heads of the same shape, form, feature, and complexion? or have the different varieties annually conspired to produce an outcast so vile, and yet so faithful and able-bodied as to stand by each individual branch of the family through good and evil, with so little variation of form, &c.

As for cheat being "*sui generis*," I never undertook to prove it by botanical rules.* The columns of the Farm Journal, I believe, are not open to discussions on botany. It is "facts from experience" the Editor asks of practical farmers. As this is not the season for pratical investigation in botany, I must beg leave to answer Mr. Miller in the words of Gay's Shepherd:

"The little knowledge I have gained
Was all from simple nature drained."

I have for a number of years been cultivating wheat and cheat side by side for experiment, but have not been able to find any traces of consanguinity, nor, as yet, to induce them to show any affinity, whatever, for each other; nor does it appear at all probable that they can be induced to mix without an absolute outrage upon the laws of nature, producing a monster which will not continue. Such seems to have been the case in "wheat and oats," while the forming of wheat and oats upon the same stalk was certainly the work of nature; the cause thereof seems just as certainly to have been an outrage upon the laws of nature, and whether committed by bee or butterfly, or some other innocent transgressor, the rareness of the occurrence seems to justify the idea that it was done by violence, and that the penalty attached is "Thy seed shall perish and not continue."

We have no desire to "substitute conjecture for analogy," nor do we think the public will be willing in all cases to take assertion for proof. "The fact that cheat is seldom found except when growing among wheat," is a mere assertion. If Mr. M. will come to this neighborhood we will show it to him growing in the fields, meadows and woods; thus producing strong circumstantial evidence that it is indigenous in our soil, and like other native weeds, continually creeping into our fields where it is not wanted. If he is a farmer he certainly knows that it grows with rye, with this difference only, that rye producing a larger and stronger plant than wheat is more able both to keep it down and to hide it; the reason why it does not grow among spring crops is too obvious to need any comment

Mr. M. admits that I asked the question, "who has ever seen a single stalk of wheat turn to cheat," but in reply evades a direct answer by saying, "every person who has seen a stalk of cheat wheat has seen that which has turned

from wheat." By this prevarication he puts me to the necessity of asking when this change has taken place. If he would prove his position by "analogy" by referring us to the time when Father Adam's rib changed into a woman, I have nothing more to say. But if he means to signify that the cheat which I have been carefully cultivating in my garden, and closely watching, has within the last seven years sprung from good wheat, I must demand stronger proof of an optical illusion than his theory of analogy has yet produced.

I did not state in the June number of the Farm Journal, that I had found oats growing out of a *sheaf* of wheat. It was out of a *head* of wheat, and I thought all would understand that I related the circumstance on account of the analogy existing between that and the "cheat and wheat," said to have been produced upon the same stalk by Prof. Mapes. As I did not make my ideas as plain as I ought to have done, I am obliged to Mr. M. for carrying them a little farther; but why does he not continue unto "something conclusive," that as wheat does not turn to oats neither is their much danger "by analogy" of it turning to cheat. "Mr. S. has not yet been called upon to execute a deed for his farm in accordance with his own proposition." The "wager of a farm" was no wager at all. I stated that a neighbor had undertaken to change some wheat which I had growing in my garden into cheat, for which service I promised to give him my farm and stock when the job was completed; but finding himself too weak in faith in his own doctrine he never attended to it. I did, however, carefully follow his directions, but could not produce a grain of cheat from plants of wheat. That neighbor was S. P. Bromley, of this town, and can be addressed by mail. My object with Mr. Bromley was to bring a fair experiment before my neighbors, many of whom are believers in Mr. Miller's science. As I have failed in that, I would like Mr. M. or any body else to inform me how I may certainly change good wheat into "cheat wheat," alias cheat or chess. All admit that nature is governed by certain laws, (or does Mr. M. contend we are in a world of chance,) and if there is a law, or an "extraneous cause," for producing this change, somebody ought to be acquainted with it; and if there is a law for changing cheat to wheat, (its present stock, as they contend,) that is, of all laws, the one under which we would most like to *pettifog*.

While waiting for this information permit me to relate, for the benefit of those who choose to read them, a few experiments which I have been trying. One says "late sowing produces cheat." On the 20th of October, 1853, I planted in my garden, carefully staked, and registered on my book, a row of wheat and a row of cheat, side by side, and treated precisely alike. By the first of April every plant of the wheat had perished, while the cheat flourished and ripened a heavy crop. I planted side by side, and watered in cold weather, for the purpose to winter kill. The wheat all perished, but the cheat grew and ripened finely. Mr. M. says "drought or some other cause." On the first of August, 1854, I planted wheat and cheat. All vegetated and came up, but from the excessive "drought," or "some other cause," unknown to me, every plant of the wheat has perished, while the cheat is in a flourishing condition and promises a fine harvest. Those who will can try the above simple experiments, but the one we would most seriously recommend to all is our old favorite, "clean seed upon clean soil."

Very respectfully yours,

Moss Grove, October 25th, 1854. F. SCHREINER.

* If our worthy correspondents *would* bring botanical rules to bear upon their controversy, they might readily settle the question at issue between them.—ED.

The Cultivation of Colza, or Rape Seed.

BY F. N. NAUTTS.

As a good thing, like the Lord's Prayer, cannot be repeated too often, I again venture to urge on the planting interest of this country, and this section of the United States in particular, the expediency of turning their serious attention to the raising of such crops as will prove not only more profitable to them individually than the common crops raised now but likewise of vast importance in a national point of view. I mean the raising of such crops that are used in the arts and manufactures, and are imported to the amount of several millions per annum, for the north Atlantic States only, and which can be as easily raised here. This will in time become more incumbent and imperative on farmers and planters of the Eastern and South Eastern States to learn and try to raise, as every successive year shows conclusively that these States cannot compete to raise as successfully the cereals or grains with the North Western, Western, and South Western States. I will then repeat, not my prayer, but my admonitions which I begun in 1853–4 pass in review which crops can be cultivated with most success and profit, although a well wisher to his country will not do amiss to offer up his prayers at the same time that my suggestions may be adopted. I will begin, then, by the oleaginous or oil bearing plants, at the head of which stands preeminent the

BRASSICA OLERACÆA CAMPESTRIS.

Rape Seed is not only an object of the greatest importance and value, wherever it is raised, for the sake of the seed, but is likewise extremely valuable as green food for cattle and sheep, in the fall or spring, or cured for hay for winter.

The Colza or Rape is a plant which requires by preference a strong soil, although it will come well on good sand or gravelly loams, with careful cultivation.

In Belgium, and the northern parts of France, where it is raised in great abundance, it enters into the regular rotation on all good heavy loams, and is thought to be one of the best preparations for wheat, owing to the tillage of the soil, the manure applied for it, and the care taken to keep it clear of weeds; it also comes best after wheat, provided this grain crop has been properly manured, in which case rape seed can be sown without manuring again, and will yield a good crop.

The ground should be ploughed in the fall or spring, and again a short time before sowing, and well manured. Then the seed should be sown very thin in drills, and harrowed in in *June* or *July*. As the plants come up, they should be weeded and thined out, a foot apart. A superior mode is to sow the seed broadcast, on a good rich seed bed, prepared on purpose. When the stubble of any grain crop has been cleared off by the harrow, the land well manured and ploughed to a good depth, the plants are brought out, and set out as cabbage plants are. This can be done six or eight weeks after sowing, or the latter end of September, or in October, either by the dibble or by hand, setting them out in every respect like the plants of cabbage, in rows two to two and a half feet wide, and one foot in the row; or to save much time, labor and trouble, they can be put in furrows one foot apart, after the plough, taking care to put them up right in the furrow, and to cover them by the return of the plough, leaving the leaves above ground and after the piece is finished, going over it to dress all plants that might be covered too deep, which can be done by a man walking along the furrows and pressing his foot against the plant, or with the hoe. The intervals between the rows should get a hoeing, or the cultivator run in, or a small plow sent through, to give them an earthing up, killing the weeds at the same time, which should be done as late in the fall as the weather will permit,

in November or December. Thus they will remain all winter without injury from the frost.

In spring they should have the cultivator run between them again, and weeded, or another slight earthing given them, which will greatly strengthen the plants.

The quantity of seed to be sown, should be from five to eight pounds per acre, and this should be sown in the bed or in the rows evenly. It is a great advantage, that the cost of the seed is so trifling in proportion to the value of the crop.

It is ready to cut and reap when the upper branches turn brown, which will be in June or July. Be sure not to let it be too ripe, for if the pods be too dry at reaping, they will shed the seed in the field, and cause much loss.

It can be reaped in the same manner as wheat, but the hand falls should be laid singly and light upon the stubble, behind the reapers, and thus it should lie without stirring, until it is ready to thresh out, which will be in a short time, particularly as generally at that time, the weather is dry and warm.

When it is ready and perfectly dry, prepare a floor in the middle of the field, by levelling the ground, on which should be spread a large muslin cloth, twenty to thirty feet square; spread the rows round, and thrash round. One man or a boy to spread before the thrasher, and another to turn; or it can be thrashed by a thrashing machine, in this case taking care, if the seed is intended to be thrashed on the barn floor, to remove the plants on a large sheet, spread on the wagon, to prevent loss of seed, by the jolting and shaking of the wagon.

The seed can then be stored in a dry and airy granary until it is sent to be sold or crushed.

The Rape, in good ground, well treated, does not fail to make strong stems and succulent leaves, so that by the middle or latter end of November, it will be strong enough to bear pasturing; then turn in the sheep, but take care they do not eat but just the leaves, which they will crop first, not suffering them to touch the stalks, as that would be injurious to the plants. This will form one of the best pastures for your sheep, if you keep any, and will make them fat and in good condition; or the leaves can be gathered for hogs or cattle, but I do not advise by any means to turn in horned cattle or hogs, for the damage they will do to the stalks. The only safe stock to turn into Rape, in my opinion, being sheep.

The produce of an acre of Rape, will be according to the condition of the land, management and care, from twenty bushels upwards to fifty, which will command from three and a half to four dollars a bushel, in Philadelphia, New York, Boston, or Baltimore. The yield will be materially affected by the care given to it in thrashing it properly. A very full crop will be from fifty to sixty bushels, and upwards of eighty bushels have been and are raised frequently in Flanders.

Great advantage may be derived from cultivating it in the following manner:

Take half an acre of good land, or make it so by manuring, and work it a little better than ordinary land, or as you should your garden. At mid-summer (June or July) sow on this half acre, thirty pounds, or two pecks of Rape seed—this will produce a plentiful crop, as few grains will miss; let them grow until the middle of September; take eight or ten acres of wheat or oats, or early corn; plough the stubble, and let it lie a month or six weeks to rot; then plough it again; if the land has been manured previously well, it will thus be in good condition.

Begin at one side, plough a furrow, set the plants in the furrow, at the distance of a foot, leaning against the side of the furrow; set the plough and make another furrow, at two feet distant from the first, and in returning it will cover the first furrow planted, and continue so until the whole field is set.

[TO BE CONCLUDED IN NEXT NUMBER.]

Feeding Pigs.

Pigs are very gross feeders, nothing comes amiss to a greedy hog—roots, herbs, fruit, grain, flesh, fish, and even hay, straw and fresh manure. In the fold yard and fallow fields he is a very useful fellow; but in grazing lands he does injury by rooting, by pulling up grass roots, and by his dung proving nauseous to other stock. He is very soon affected by change either of food or weather. Frozen swill and putrid flesh are very pernicious. Night air and cold rains are the great cause of every ill suffered by young pigs; sour milk, butter-milk, or bran mixed with water, will make them scour; but steamed roots, mixed with meal, whey, or even water, given warm and in warm sties, will make them thrive faster than any other animal. Raw Potatoes or other roots are injurious to them, while old pigs will get fat upon such food. Pigs should not be put together for fattening in too great numbers. Few feeders take a physiological view of the subject; nevertheless, they mostly adopt the principles. Young pigs require those varieties of food most adapted to promote the healthy development of frame—older pigs those kinds that fatten fastest, hence Pea and Bean meal, Indian meal, Oatmeal, milk, whey, &c., are best for young pigs; while in addition to these potatoes and other roots, steamed and Barley meal, greave-cakes, bran, pollard, &c., are best adapted to fatten older pigs; greave cakes are highly recommended for quick fattening. It is improper in breeding to put two animals together under any great disparity of kind or circumstance—the produce will assuredly be defective in many points; there should be assimilation in size and frame. It is best that the female should be of the larger breed in crossing, and in all cases of attempted improvement, a fine well-formed female must be selected. The most symmetrical animals in all breeds have been produced from a rather large, good, and well-made female, and a good male of moderate size. Pigs will fatten rapidly on grains for a time, afterward they must have more nutritious food.

Fatening on crude or dry grain is not good management; it will sometimes cause death by swelling in the stomach, which, indeed, it sometimes bursts after eating to excess; it should always be soaked if given as grain—much better to grind it. If made into malt, all the better. Barley bread or cake, soaked in milk or whey, is said to be unsurpassed for efficacy in fattening. Bean-meal fattens rapidly, but makes the bacon hard and 'craunchy.' Indian meal fattens very quickly, and makes solid, firm good bacon. Barley-meal is superior to either, and produces excellent quality in the bacon. Pea-meal, mixed with whey or milk, fattens young pigs admirably, and produces the finest quality of pork. Wheat-meal: this is too expensive, and only the coarsest kind is used; it will fatten freely, but the meat is light and flabby. Oat-meal fattens satisfactorily, and produces the most delicate meat as to flavor. Tare-meal—a meal from Tares—is similar to Bean-meal, but not equal to it in efficacy. Linseed meal fattens very rapidly in mixtures with other meal, but makes the bacon oily and flabby. Acorns and Beechmast are good for store pigs, but fatten very slowly, and never well Acorns produce good firm bacon; but the bacon from Beechmast feeding is coarse and flabby, with unsound oily fat. Bran, pollard, and seeds of weeds are very slow fateners. Much more might be said, but I will merely add feed them carefully from the first.—*Ex.*

PENNSYLVANIA FARM JOURNAL.

VOLUME 5. WEST CHESTER, FEBRUARY, 1855. NUMBER 2.

Removal.

After mature consideration, we have determined to remove our publication office to the city of Philadelphia; and in furtherance of this purpose, we have rented the large room at No. 33½ North Seventh street. The editor will reside, as heretofore, at West Chester, but to avoid confusion, all letters and communications may hereafter be addressed as above, instead of to West Chester as formerly.

To those who may desire to learn the reason of this change we will say, that the inconvenience in having our forms stereotyped, the difficulties recently experienced in having our press work properly executed, and the almost impossibility of having our folding, stiching and covering done in season, are in themselves sufficient to warrant it. We may add, that at least nineteen-twentieths of all the letters we receive come by way of Philadelphia, and a like proportion of those we mail, as well as a like proportion of the Farm Journals, pass through that city on their way to their destinations. The great mass of our letters are a day longer in reaching us, and our replies and Journals are a day longer in reaching those for whom they are intended, than if our business office was in the city. Here we are in the centre of a district of unsurpassed fertility and productiveness, there we will be in the centre of trade and travel from Pennsylvania, New Jersey and Delaware;—here we occasionally meet our friends from different parts of this *county*, there we may more frequently meet them from all parts of this and adjoining *States*;—a location here is most congenial to our tastes, a situation there best calculated to promote our interests.

It is not, we confess, without feelings of deep regret that we are constrained to leave a pleasant residence in the beautiful borough of West Chester, and remove from among a large circle of valued friends; but our interests too clearly indicate our course, to prevent personal comforts, associations, and predilections to govern it.

Ere this number reaches our patrons we hope to be fairly installed at No. 33½ North Seventh street, where we shall be happy to meet them one and all.

J. M. MEREDITH & CO.

The Best Washing Machine.

A subscriber inquires of us "which is the best washing machine," but as we are unacquainted with the respective merits of the different articles, we trust that some of our readers who are will give us their opinion on this matter.

For the Farm Journal.

The Field Pea as a Renovator of the Soil.---No. 2.

BY J. S. HOUGHTON, M. D.

In a recent number of the Farm Journal, I presented a general view of the merits of the Field Pea, or Cow Pea, which is much employed in the South as a means of improving exhausted soils, particularly those of a sandy character. Since writing that article, I have spent some weeks in Virginia, (where I now write the present one,) and have had some further opportunity of studying the usefulness of the crop, the methods of cultivating, &c. With this increased knowledge on the subject, I am more than ever impressed with its value in respect to its product in grain, as green or dry fodder, or as a manuring crop to be turned under like clover, before corn or wheat. The black-eyed white Field Pea, which is somewhat grown in New Jersey, is much used in Virginia and the more Southern States upon the table, stewed with pork, or as pea soup, in the winter, and is much relished by many persons. The brown pea is used in this way in Georgia upon the tables of the best hotels; but to my taste, the flavor of it is not very agreeable. These peas are sold in the markets at the South at about $1 25 to $1 50 per bushel. The average yield of seed per acre, with the careless cultivation of negro labor, is about sixteen to twenty bushels. The vines are also valuable as winter fodder for all kinds of stock.

I find the Field Pea planted in a great variety of ways, viz: as a separate crop, in drills or broadcast; between the hills with corn, at the same time corn is planted; in drills between the rows of corn; broadcast between the rows of corn, at the last working of the corn; and after grain, broadcast, to be ploughed under in the fall.

All the methods of planting this pea have their peculiar advantages according to the various circumstances under which they are resorted to. To obtain the best crop of seed and vines, no method can surpass the planting in drills as a separate crop, and cultivating as we do the table pea at the North. The drills are here made from four to five feet apart, and the peas are dropped from two to three feet distant in the rows, like corn, from ten to fifteen peas in a hill. The vines will spread so as to cover the entire surface of the ground with a heavy mass of vegetable matter, two or three feet deep, of a rich dark green color, throughout the longest and dryest season. This pea, like the clover, (to which class of plants it belongs,) is very deeply rooted, and thus by means of its numerous leaves and long roots, abstracts

from the earth and the air a vast amount of nutriment, (especially carbonic acid, water and ammonia,) the three great elements of vegetable growth, and thus rather adds to the riches of the farm than impoverishes it.

My own opinion is, formed after a very slight and imperfect trial of the pea last season, that it would be better to plant the pea in drills as they do the English garden pea on the truck farms in New Jersey, sowing them along the drill, instead of planting ten or fifteen in a hill. Experiment, however, will decide the question. The seed may be gathered by hand, and then the vines may be cut up with a hoe or scythe, and cured for fodder; or the vines may be mowed and cured, and the peas may be threshed out like any other grain.

As a separate crop for seed, the sowing of these peas broadcast is not generally thought to bring so good a crop, or to be so easy to gather. It is also more apt to leave the land foul. It has only one advantage over the culture in drills, namely: it requires less labor in cultivation.

The sowing of this pea between the hills of corn, at the same time the corn is planted, strikes me as a very good plan, although I have not much information as to the value of the crop thus obtained. The writers in the Southern agricultural papers say it is rather an uncertain crop when thus planted, as the corn is apt to shade it too much. Corn is here (in Virginia) planted very much in drills, a single stalk in a hill, and not three stalks as you have more generally in Pennsylvania. This, I suppose, is because the land is light, and will not mature three stalks in the hill. On fair land, or that which has been properly manured, the farmers tell me they get a good crop of peas, when planted with corn as above described.

Planting in drills between the rows of corn, or sowing broadcast between the rows of corn at the last working, I have not seen practically in any field that I have visited. As far North as Pennsylvania or New Jersey it would not answer, if a seed crop was desired, as the seed would scarcely ripen well if sowed so late as the last working of corn.

As a broadcast crop after grain, in the South, to be turned under in the fall, or as a broadcast crop in Pennsylvania and New Jersey, to be turned under as manure, or fed to stock in the field, it is one of great value. The season is too short with you, I think, to get a good crop of vines after wheat or oats, the same season. But in Virginia and farther South, this is done with great advantage. I saw a field near Richmond, a few days ago, on which wheat had been raised with a large increase of grain every year for three years in succession, and now in wheat again for the fourth year, with a fine show of young blades; and this was in some degree attributable to the fact that as soon as the wheat was removed, peas were sown broadcast and produced, the same season, a rich and heavy crop of vines partly seeded, which were then turned under when preparing the ground for the next sowing of wheat. To be sure the owner of the field is a wealthy man, and manures heavily with ashes and house offal from the city, and probably also with guano, bone dust, or other concentrated manures; but beyond all question, much of the material which goes to form the wheat crop is really *created* on the field by the pea, and would have to be furnished in the form of loam, or peat, or some other carbonaceous matter, if not so created by the pea. The pea vine and the pea are also rich in nitrogen, or the element of ammonia.

Now, in Pennsylvania and New Jersey, you may not be able to grow the pea vines successfully the same season after wheat; but it struck me that, if the land was in fair heart, a farmer might, by judicious manuring, grow wheat every other year on the same field alternately with peas, broadcast, to be turned under as a green crop; or if the land was stiff, the peas might be allowed to ripen enough for seed, and then be turned under to open and loosen the soil. I suppose nearly all plain, practical farmers would prefer a more general rotation of crops to such a course as this; but while wheat is so valuable, it may be worth while to consider if we can supply the constituents of that crop economically, and keep the land good, while we still grow it year after year, or every other year, upon the same field. My own opinion is, that gradually increasing crops might be obtained, in alternation with peas turned under, by a sufficient manuring with stable manure, or better still with guano, bone dust, and ashes or potash, properly applied. The proper mixture and proper method of applying these materials, I cannot discuss in this article. As a preparation for corn, oats, or other grain, the field pea is equally as valuable a fertilizer as for wheat.

In Virginia and the South generally, hogs are largely fed upon the field pea, by being turned directly into the field. Cows and sheep are also fed in the same way. It is not the practice in the South to gather much hay or fodder of any kind for stock. They are fed and fatted in the open field, and must take care of themselves to a very great extent. It has been said that the pea, grown upon rich black soil, and in wet weather, has killed hogs and other stock. But this effect is now pretty generally attributed by the most intelligent farmers to two causes: first, feeding stock too freely on dry peas, when hungry, the peas afterwards swelling in the stomach, and causing colic and death; and secondly, permitting stock to eat rotten peas and decaying vines in wet weather. Eating sound peas, in moderation, does no injury to any kind of stock, but they are found to be exceedingly nutritious and even fattening.

The Field Pea, as I have stated in a previous article, delights in sandy soil, and will grow where clover will not, affording a vast amount of foliage and shading the land completely, on even the poorest soil, without any other manure than a little charcoal or well rotted muck or peat. Lime, as it is well known, is essential to the growth of the pea, as well as the clover, and plaster of Paris is a very appropriate dressing where a crop of peas is desired. Guano would, of course, increase the luxuriance of the vines, but without plaster, especially on rich ground, might fail to make peas.

I trust that my suggestions on this subject may lead some farmers in Pennsylvania and New Jersey to give this pea a trial, and that they will favor us with the results.

To Keep Silk.

Silk articles should not be kept folded in white paper, as the chloride of lime used in bleaching the paper will

probably impair the color of the silk. Brown or blue paper is better; the yellowish, smooth, Indian paper is best of all. Silk intended for dress should not be kept long in the house before it is made up, as lying in the folds will have a tendency to impair its durability by causing it to cut or split, particularly if the silk has been thickened by gum.

Thread lace veils are very easily cut; satin and velvet being soft are not easily cut, but dresses of velvet should not be laid by with any weight above them. If the knap of thin velvet is laid down, it is not possible to raise it up again. Hard silk should never be wrinkled, because the thread is easily broken in the *crease*, and it never can be rectified. The way to take the wrinkles out of silk scarfs or handkerchiefs is to moisten the surface evenly with a sponge and some weak glue, and then pin the silk with some toilet pins around the shelves on a mattrass or feather bed, taking pains to draw out the silk as tight as possible. When dry the wrinkles will have disappeared. The reason of this is obvious to every person. It is a nice job to dress light colored silk, and few should try it. Some silk articles should be moistened with weak glue or gum-water, and the wrinkles ironed out by a hot flat-iron on the wrong side.—*Scientific American.*

Soil Analysis.

Letter from Prof. Haldeman to C. P. Holcomb, Esq., Newcastle, Del.

Dear Sir:—In a letter to the Editor of the Delaware Gazette, Dr. D. Stewart expresses the opinion that the Agricultural Department of Delaware College should compete for the $100 premium of the Maryland Agricultural Society, for the best formula for soil analysis, and he enlarges upon the importance of such a formula.

It appears that in 1850 he wished Professor Henry to have a premium offered by the Smithsonian Institution for the best formula. Professor Henry replied truly, that "it would be impossible to get any three chemists to unite in preferring any formula for soil analysis." Nor would such a formula be adhered to. Analysis involves so many elements, that no general rule, or rather system of rules, can be given. The operations can be greatly varied, and still a reliable result obtained. Much depends upon the apparatus, and the purity and number of the chemicals used.

If a chemist cannot depend upon one of his re-agents he can often take another, and if he has not some expensive piece of apparatus, he can vary his mode of procedure, and, in fact, he ought to do so to verify his results. He may use a "dry mode," or a "wet mode," or follow Woehler on one point and Rose on another.

One mode of determination may be used if the chemist collects his own specimens, and another if they are sent to him; because, in the former case, geology will inform him what to expect. One person may analyse the entire mass, another reject the granular matter which could not for many years form a fertilizing portion of the soil; and one will perform successive steps with fresh portions of his material, whilst another will make extensive use of his residuum. One mode may be pursued if twenty analyses are progressing together, and another if there is but one on hand; whilst an economical chemist will often use a mode because it does not involve the use of expensive chemicals, as chloride of platinum.

The argument for a formula, drawn from the use of a uniform Pharmacopoea, has no bearing here. The physician must know the composition and strength of the tinctures, extracts and compounds, furnished by the apothecary, and hence the necessity of uniformity. But should it become necessary to analyse a compound like the Cherry Pectoral of the forger Ayer, (I say *forger* because he forged the name of Prof. Silliman to help his nostrum,) each chemist will take his own mode in detecting the prussic acid in it. If the analytical chemist is to submit to formulas without using his own judgment, he becomes a mere apothecary, and his profession sinks to a trade.

Whilst I have no doubt of the value of the modes adopted by Dr. Stewart, (and their employment in Dr. Higgins' labratory is good evidence in their favor,) I think I have said enough to justify the course of Prof. Henry.

Boussingault has found that carbonic acid is quite abundant in the soil, and as it has an important part to perform, directly and indirectly, in vegetation, besides the composition, the mechanical structure, consistency, and depth of the soil and subsoil must be known, (as well as the amount of carbonic acid and ammonia,) which cannot be well ascertained in specimens not carefully collected and preserved. It is probable that a soil will be richest in ammonia in the month of March. A separate analysis of the subsoil is not usually made as it should be, when it exists in a distinct state within the reach of cultivation.

Have we not room to believe that much of the dissatisfaction with agricultural practice founded upon soil analysis has arisen from neglecting the agency of carbonic acid, which is not mentioned in many analyses, although, from its great power as a solvent, it must exercise much influence upon the other ingredients present.

Respectfully yours,

December 21, 1854. S. S. HALDEMAN.

Grapes in Consumption.

The use of grapes as an article of food is much recommended in cases of consumption. They contain a large quantity of grape sugar, the kind which most nearly resembles milk sugar in its character and composition, which also is very useful for consumptives, it having a great attraction for oxygen, and, therefore, readily affording materials for respiration.

Domestic Guano.

If ten millions of dollars are paid out of the United States annually for imported guano, is it not time for farmers to commence the manufacture of domestic guano, if, as is said, every family of four persons may make a ton, by saving what is now thrown away?

During the winter, the earlier the better, examine your wagons, carts, tools and implements, repair all that require it, give them a coat of cheap paint, and put all not required for use away under cover.

For the Farm Journal.

European Agriculture.---No. 12.

Agricultural Experiments at Moeckern on Sheep—Stall Keeping, Fattening, &c., &c.

Having laid the avowed objects of the Agricultural Investigation Station at Moeckern before the reader in my last, the present article shall be devoted to the manner in which its operators have been carrying them out, and the means they have employed for the same. This I shall endeavor to do, by condensing from their annual reports, of which three have already been issued, varying in size from sixty to one hundred and seventy pages.

These reports are characterised by the same practical bearing, which was so conspicuous in the plan of operation laid out by the committee for investigation. And what is more they are *original*—entirely original; an attribute of which few in these days of copying can boast. But since the circumstances of the places are so different from the agricultural affairs of the United States, the experiments will lose the value for the trans-Atlantic farmer which they have for the German. Yet to suggest plans of operation in our own country they are excellent. The question, what are we ignorant of, and what do we wish to learn, should proceed every rational investigation.

In the days of our great-grandfathers, when farmers disdained agricultural reading, and wanted no better evidence that a thing was false than that it was in the newspapers, and boys knew no further use for books than to confer a good threshing upon them for the half committed lessons they contained—in such good old times it would have been almost an insult to the intelligence of the wielder of poverty's staff beneath the thatched roof, beside the old barrack and open cow-yard with a barbarous mud hole in the middle of it, to propose such a question for his consideration.

But the more enlightened views of our reading agriculturists of the present day know full well that this question can, even yet, with some degree of propriety, be asked. But with what unhesitating confidence these veterans of the barshare plough (there are none such now) could defy the efforts of those who would mention such a thing as scientific farming in their ears. "You talk about scientific farming, the philosophy of deep plowing, &c. I know more about farming, &c., &c."

But their day is past; they cut down our rough forests, and did much good for us—peace to their ashes; yet, perhaps it be cruel to do so, one cannot help wishing that a few of these old men had been spared, or that they had some like descendants in this generation, till we could have the pleasure of collecting them together, and after their honest protestations against any necessity for more knowledge on the subject of their art, the following questions were put to them.

1. How much corn, oats, beans or potatoes, is required to keep cows, oxen, sheep and swine; what fraction of the weight of such animals, of each of these substances, will do it?

2. What is the most profitable mixture of the above concentrated foods with hay, straw and chaff, to keep stock with the least expense?

3. What quantity of each article of food has the greatest fattening power, and what is its relation to the other substances in this respect?

4. What admixture of light food, (hay, straw, &c.,) with concentrated food (carrots, &c.,) will produce the most fat with the least expense? That is, what relation should the nitrogenous (nutricious) substances of the food bear to the non-nitrogenous (not nutricious, not capable of producing flesh and blood) in order that the digestive system of the animal may extract all the former (the nitrogenous) and manufacture it into flesh, that none may be found in the excrements?

5. How much of each of the foregoing foods is equivalent to, or can produce, one hundred pounds of flesh and fat.

6. What is the value of the above foods to supply milk, and to sustain strength in working cattle?

We will not multiply the above questions at present, or complicate them by asking the modifications produced by temperature and other controlling agents, but merely require that the answers be given, and the facts upon which they are founded definitely stated.

The assertion is safe that there are *not* known facts in the agricultural world sufficient to found a rational answer to these questions on. Many will answer about two bushels of oats are equal to a bushel of corn, and about twenty bushels of corn are equal to a ton of hay, &c., &c. And why? Because the prices are *about* in this ratio. There is "about" as much relation between the datum upon which such answers are given, and that upon which alone their solution can depend, as there is between the price of a hoe harrow and the time required to plow a field. Suppose the same *about* system was generally followed in surveying land, what would be the result? Sometimes it has been followed, as thousands of dollars spent in worrying law-suits about old half recorded land marks testify. Yet at this day, the want of proper land marks in the field of agriculture is causing a thousand times more waste of money than ever was pocketed by lawyers, for talking about the probabilities of this stone, or that stake, or the other marked tree, being the one that some old-time, inaccurate, careless surveyor had in his mind, as he went blundering along *about* on the line one hundred years ago.

The first experiment made in the Moeckern institution had for its object the solution of some of the above questions. To accomplish which, with regard to sheep, twenty-one sound, healthy, two-year old Merino wethers were selected from a large flock, in order to get them of as near the same size and appearance as possible. They were fed from the 9th to the 23d of March on the same kind of food (wheat straw and second crop hay, the latter such a mixture as usually grows on the better class of meadow land,) with as much as they would eat. On the 24th of March the trial commenced. They were all weighed and divided into seven stalls, three in each stall. The food for trial was rye meal (rye ground down, not sifted), rye bran (from what I have seen of the wind mill ground grain here I think the bran is richer than ours), potatoes (not of the very best quality), rape cake (the residue of the vegetable oil process here, which is very extensively carried on, it corresponds in some degree to the pummace of the cider mill), linseed cake (similar to the last, except that it is produced from flax-

seed instead of brassica rapus), barley, ground down, and ground oats, and not very good hay the first winter.

The entry was supplied with thermometer, weigh scales, meal chest, and all necessary apparatus, with a large black-board to record the amount of substances fed, the temperature, &c., till it was more permanently recorded. They were fed three times daily, seven o'clock, morning, only hay, at 1 P. M. a little hay and half a pound of the concentrated food, and at 7 P. M. the same quantity of food as at noon. The stall 1 received a like quantity of hay at each foddering. The temperature of the air at each foddering was recorded. Each morning at seven o'clock, after the first fodder had been distributed, each stall received a portion of fresh water, (varying from sixteen to twenty pounds,) which was also accurately weighed.

The animals were all weighed every Saturday afternoon, or Sunday morning before the first foddering. Three trials were made of them.

FIRST TRIAL.

The object of which was to learn the amount of food required to keep sheep without increase or decrease of weight:

Stall.	Weight of Sheep. March 24.	June 1.	Daily food. Hay in lbs fed.	Other food.	Manure produced
I.	242	247	7 5-16	no other	593
II.	263	249	4 and	1½ lb rye meal	466½
III.	257	231	4 "	1½ " rye bran	417
IV.	241	221	4 "	1½ " rape cake	
V.	209	215	4 "	1½ " linseed "	554
VI.	226	230	4 "	6 " potatoes	558
VII	222	241	4 "	12 " beets	647

The manure was weighed on the 23d of May, at which time the sheep were allowed to remain out of the stalls part of the day. The manure was then made between the 24th of March and the 23d of May.

The second and third of the above columns gives the weight at the commencement and end of the trial, which was continued till the weight became constant for each week. Each number is the sum of the weight of three sheep. To show the weight and its variations each week I will select a single example, stall III weighed each successive week from first to last: 257, 236, 228, 237, 325, 233, 235, 229, 225, and lastly 231. The great loss of weight the first week must not be attributed to loss of fat and flesh, but to the more concentrated food making less weight in the stomach. The last four or six weeks show variations back and forth, consequently proving that the fodder can keep the sheep at this weight. For a few days at first some of the stalls did not eat all their food, but they cleaned all up before the close of the first week, so that half an hour after feeding not a vestige remained. They all continued healthy and hearty during the trial. In the

SECOND TRIAL

All the precautions and observations were attended to as in the first. The fodder was changed, thus the stall 1 received nine pounds of hay, and all the rest the same hay as in the first trial; but their solid food was doubled, each stall receiving three pounds daily, except that VI and VII had, the former three pounds of barley and the last three pounds of oats, instead of potatoes and beets. The same sheep were experimented upon, and the weight obtained was (the sheep having been sheared):

	I.	II.	III.	IV.	V.	VI.	VII.
June 1,	228	233	213	206	200	214	22
July 27,	244	263	233	232	226	240	237

And as an example of the weight at the end of each week stall III gave 213, 210, 223, 217, 225, 228, 232, 229, 238, and lastly 233. We thus have the datum for getting the ratio between the food and this weight and increase of fatness in sheep. The hay was of better quality than that of the first trial, and from the 15th of July they received new hay. The food was all eaten up by the sheep from the first, and they continued healthy and brisk. The manure was also accurately weighed at the close of the trial. They received four pounds of rye straw weekly to each stall; and in the last and

THIRD TRIAL,

which commenced on the 27th of July, the food was again changed by increasing the hay of stall 1 to eleven pounds, and the hay of all the others to six pounds daily. This was a fattening food, but with quite different results. Stall 1 received in the morning four pounds, and at the other two fodderings three and a half pounds each of hay. The other stalls received three pounds of hay in the morning and one and a half pounds at the other fodderings.

	hay.	conc. food.	manure.	weight July 27.	weight Oct.	water.	water a day.
I	11	nothing	1069	244	267	1371	13⅔
II	6	3 rye	983	263	300	1297	13
III	6	3 bran	936	233	286	1272	12⅔
IV	6	3 rape	977	232	282	1299	13
V	6	3 linseed	1117	226	174	1430	15
VI	6	3 barley	1176	240	295	1511	14½
VII	6	3 oats	1088	238	279	1317	12

They also received some salt once a week.

By the above it will be seen that sheep drink more water with barley, oats, linseed cake and hay, than with rye and rye bran, and that the manure is in proportion to the water drank. It also was found on analysis to contain more water, so that there would not be so much difference in the water-free manure. The state of the weather was also found to make a difference in the quantity of manure. In warm weather it is materially less with the same quantity of food, owing no doubt to a greater portion of water passing off in perspiration, as well as evaporation in the stall. The fleece of the sheep fed on hay was black and dirty, more so than any of the rest, and on slaughtering weighed decidedly the most. The fleeces of IV and V were remarkably clean and white, which was supposed to be due to less oil being distributed upon the fleece, as the result of the rape and linseed cake feeding. The manure from the cake showed the greatest amount of unappropriated nitrogenous (nutricious) substance. The conclusion was that it was not mixed in as suitable proportions as the other substances.

In the first trial (for stall keeping) the sheep eats its weight of hay in thirty-four days, in the second trial (preparation for fattening) in twenty-seven days, and in the third trial (for fattening) in twenty-five days. The best substances for keeping were found not to be the

the best for fattening, and it is not very easy to find an unobjectionable rule for calculating the results obtained from the experiments made.

For instance: If on two sheep of equal weight, seven pounds of hay produce precisely the same result on one, as four lbs. of hay and one and a half lbs. of rye bran do on the other, it by no means follows that three pounds of hay are equal to one and a half pounds of bran. If such were the case, by simple calculation, (3 : 1½ : : 7 is to 3½) we would have three and half pounds of bran the daily food of a sheep, which is absurd; we have 4 lbs. hay and 3 lbs. hay equal to 4 lbs. hay and 1½ lbs. bran, but we can't here take equals (4 lbs.) from equals and have equals, or 3 lbs. hay and 1½ lbs. bran.

We can only say that 1½ lbs. of bran (mixed with 4 lbs. of hay) are in effect to 3 lbs. of hay (mixed with 4 lbs. of hay). Then it is altogether dependent upon the relative price of bran, or hay, which we had better use, all hay, or part bran; and so of the other concentrated foods. But there is a certain relation that hay can be mixed with concentrated foods that will produce the greatest effect with the least quantity. This relation is different for keeping from what it is for fattening, and it can only be learned by direct experiment, and from the relation of the foods thus obtained we can calculate their relative values. The experiments at Moeckern seem to lead pretty satisfactorily to the conclusion that 100 lbs. of hay was equal to 43.99 rye meal, or 54.65 rye bran, or 58.60 rape cake, or 64.38 linseed cake, or 215.05 potatoes, or 444.85 of beets, for the purposes of stall keeping—at least these are the exact results obtained in the first trial, where 3-7 of the hay was replaced by the food it is compared with here.

For fattening, as found in the third trial, the results showed that 100 lbs. hay was equal to 51.53 lbs. rye, or 59.41 bran, or 58.59 rape cake, or 63.69 linseed cake, or 54.95 barley, or 60.61 oats. For all the experiments bran gave a surprisingly good result.

The fodder was analysed, and its starch, gum, sugar, dextrine, pectin, pectic acid, albumin, caseine, fibrine fat, water, mucic acid, nitrogenous substances, ashes, sand, &c., estimated, and from the results some of the foregoing conclusions are in part derived; but as the raising of sheep is not so important in Pennsylvania as here, probably the above sketch is quite as much as will be of interest to the reader. I give it more to show what the station is doing, and what such places can do, than for its practical importance in America, where different fodders would require the same kind of experiments repeated with different articles of food.

The labor of carrying out such experiments is immense, several thousand weighings of weight from that of a sheep down to less than a flea being required. But nothing short of these can accomplish the object desired, and when stations spring up over the civilized agricultural world, and they exchange reports and compare notes and labor for a few years, the questions proposed to the old farmers at the outset will find a solution.

I shall in the succeeding letters notice the experiments with crops and with cows, and finally the experiments of the coming winter with swine. Adieu,

E. P.

Vegetable Seeds.

MR. DARLINGTON:—Perhaps there are few farmers who have not been very frequently disappointed in their crop of vegetables, both in field and garden, from defective seeds, and there is no one department of rural economy where want of care in selection, growth, and knowledge of the habits of certain varieties to mix with each other, occasions such a positive and irreparable loss. A farmer at the usual time for sowing (and unfortunately there is but one right time for May crops) sows in his field for part of his winter supplies a crop of carrots, beets, turnips or cabbages. Many kinds of seeds, such as cabbage or turnip, are very similar; the growth of many varieties of the same species are the same, and he has no way to ascertain till near the time of gathering, and too late for replanting, that his expected crop of large orange or Altringham carrots are the early Horn variety, that his large sized drumheads, so noted for a profusion of leaves and immense heads, are a much smaller kind, and that his turnips are mixed up of half a dozen sorts and shapes of no market value whatever.

The writer of this was once deceived in this way with more than an acre of turnips, which grew finely, but upon gathering yielded only five or six bushels fit for market, the rest being many of them shaped like a carrot, and there were at least half a dozen kinds. The seed had evidently been grown contiguous to other plants of the same natural family.

Now what is the remedy for this great evil? A man buying a few yards of cloth or calico can easily detect by examination any imperfection, but in the matter of seeds he must depend on the seller, and has no means of detecting a mistake till too late for remedy, and the loss is often very heavy, the mere cost of the seed itself being of no importance.

In my own experience, Mr. Editor, I have been more unfortunate in seeds purchased of farmers than from seedsmen, and was long puzzled to account for it, particularly as I often read in your and other agricultural papers advice to farmers to grow their own seeds, in order to be certain of their genuineness. Reflection, observation, and some little experience, have satisfied me that it has resulted often from real ignorance among farmers; that there is an art in the business, which consists partly in keeping the same family of plants widely enough separated, in selecting such portions of the seed as are found to be generally most productive, and also in choosing at first pure specimens to grow seed from. Cabbages, turnips, parsnips, and indeed nearly all other vegetables, I have also been told, must always be transplanted before being allowed to run up to seed, otherwise it will not be very reliable. This many of us have proved by planting seed from a chance vegetable of any kind, which has happened to grow up in some neglected corner of the garden.

Safety in this, as in other business, depends on a proper division of labor. The growing of seeds is a distinct business from farming or growing vegetables, requires long practice and experience to understand it properly, and a very nice and discriminating perception. I am informed our most careful seed growers always raise nearly double the quantity of any particular crop

they intend for seed, so as to be able to select only the pure varieties from it, and otherwise dispose of the remainder. There is a constant tendency in vegetables to deteriorate, or run back to their original wild state. The intelligent and experienced seed grower readily detects this tendency at a glance in the peculiar curl of the leaf, habit of growth, and some, to him, striking peculiarity, entirely unobserved by others. This is cause of constant watchfulness and anxiety.

Next to the drug business, where mistakes from carelessness or ignorance endanger life, I think the seed business requires the greatest integrity, carefulness and minute attention. The cultivator, whether farmer or gardener, must rely upon the assurances of the seedsman when he plants his crop, and the latter is responsible to the community to leave no stone unturned, either by growing them himself, or having them grown under his supervision by others, to ensure correctness and reliability. Yours, A VICTIM TO BAD SEEDS.

Philadelphia co., Jan., 1855.

For the Farm Journal.

Mercer County Agricultural Society

MR. EDITOR:—In the November number of the Farm Journal, you desired to have the proceedings of the Mercer County Agricultural Fair. Enclosed I send you a list of the premiums awarded at the third annual exhibition of the society held at Mercer on the nineteenth and twentieth days of September.

The first day was appropriated to receiving, entering, and arranging articles for exhibition. Second, was devoted to the exhibition of articles and animals, which were entered on the secretary's books the first day, and the awarding of premiums, &c.

Owing to the severe drouth which visited our county during the greater part of the summer, many persons predicted our fair would be a failure; but when the time arrived all fears of this kind were cast from our minds. At an early hour horses, cattle, sheep, and hogs, came in droves, and by ten o'clock A. M. our grounds were one moving mass of animals and human beings. The day being beautiful the number of people in attendance was greater than at any previous exhibition. The show of stock was superior in both quantity and quality to any previous fair.

Over one hundred horses and colts were on exhibition many of them fine and beautiful. A number of fine cattle were exhibited mostly of the Durham breed, as they are most generally prefered by our stock growers, to any other breeds. The sheep and hog department was well represented. In the mechanical department there was a slight falling off from last year, and as a matter of course (*owing to the drouth*) the display of vegetables was not so good. From the number of spectators who gathered around the horse ring, and the loud peals of laughter and shouts of joy told that this part of the exhibition attracted a due share of attention.

You will learn from our list of premiums, that we award no premiums for lady riding &c. It is the object of our society to encourage and promote the interest of the farmers and mechanics, also domestic economy and industry &c,. and not like some of our sister counties make a grand equesterian show and pay ten times more for the best lady rider than they do for the best horse or bull or thirty times the amount paid for the best quilt, or any specimen of domestic manufacture. The interest manifested by our farmers in stock shows that they are determined to keep pace with their brethern elswhere in growing the largest, best and most of it, and from the amount of blooded stock purchased and brought into our county within a few months, and the adaption of our soil to stock growing, we expect soon to be able to compete with older counties that have been engaged in this business for years.

The society met on the thirteenth of October and elected the following officers for the ensuing year. *President* William Waugh, *Recording Secretary* J. H. Robison, *Corresponding Secretary* Seth Hoagland, *Treasurer* A. J. Greer, and one Vice President in each township; a committee of five persons was also appointed to erect on the fair grounds a floral and Mechanics Hall.

Our grounds contain about five acres enclosed with a tight board fence beautifully shaded by the native oaks, and situated on a beautiful eminence, within one mile and in full view of the borough of Mercer, the society has at great expense brought water from a neighboring spring by means of pipes into the fair ground which will make the supply of this very necessary article inexhaustable, and with the improvements of the above mentioned buildings we hope to make it the resort of all the enterprising inhabitants of our county at least once every year, to compare their products and have an interchange of sentiments on the great questi n of successfully tilling the soil &c.

In all premiums of two dollars and upwards our society has awarded the Pennsylvania Farm Journal, in lieu of one dollar for one year. Yours respectfully,

SETH HOAGLAND.

Mercer, Pa., Dec. 18th, 1854.

For the Farm Journal.

Please admit a few questions into your columns, or answer them editorially, and oblige many. Why does wheat grow and yield better on clover sod plowed three months before sowing than on that plowed but a few days or weeks? Why do committees award premiums on machinery and implements that are good for nothing and that they know nothing about? Will sheep sustain any injury from hen lice? T. W.

Value of Roots.

In the winter of 1852-3, we fed seven cows on good English hay, cut and mixed with one quart of oil-meal and two quarts of cob-meal, per day, for each cow. In the winter of 1853-4, the same cows, coming in about the same time, fed on hay cut upon the same ground as that of the previous year, and with the addition of four bushels of ruta bagas per day, but not a spoonful of grain of any kind, gave just *double the gallons of milk* that they did when fed on grain! The circumstances under which the cows existed, both winters, were alike, with the exception of temperature—the weather being much the coldest when they gave the most milk. The barn, however, in which they were kept is a very warm one, so that in the coldest weather they were all comfortable.—*N. E. Farmer.*

"Free Martin" Cows.

The following communication from our friend Dr. Wm. H. Worthington contains some interesting facts, and will throw additional light upon the mystery that has enveloped that "very singular anomaly in natural history," the sterility of Free-Martin cows. By way of introduction to the Doctor's remarks, we append the following notice of "Free-Martins," by Youatt, in his excellent work on cattle:

"The opinion has prevailed among breeders from time out of date, that when a cow produces two calves, one of them a bull-calf and the other a heifer calf, the male may become a perfect and useful bull, but the female will be incapable of propagation. The curious name of *free-martin* has been given to this animal. That accurate inquirer, Mr. John Hunter, spared no pains or expense to ascertain the real foundation of this belief; and he availed himself of the opportunity of examining three of these free-martins. In all of them there was a greater or less deviation from the external form and appearance of the cow; and in the head and the horns some approach to those of the ox; while neither of them had shown any propensity to breed. The teats were smaller than is usual in the heifer; but the outward appearance of the bearing was the same.

"They were slaughtered, and he examined the internal structure of the sexual parts: he found in all of them a greater or less deviation from the form of the female, and the addition of some of the organs peculiar to the male; and he ascertained that they were in fact *hermaphrodites*.

"It is not then a mere vulgar error that the female twin is barren; on the other hand, there are several well authenticated instances of these free-martins having bred.

"It would hence appear that the rule is, and a very singular anomaly in natural history it is, that the female twin is barren, because she is an hermaphrodite; but in some cases, there not being this admixture of the organs of different sexes, or those of the female prevailing, she is capable of breeding. If the free-martin have entirely the appearance of a cow, she will breed; if she be coarse in the horn, and ox-like, she will be barren."

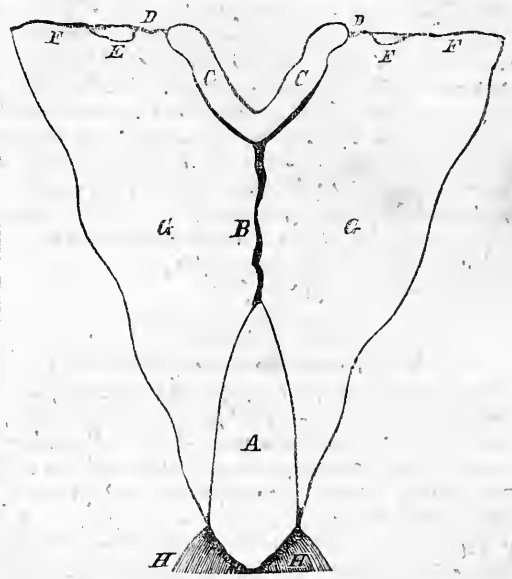
WEST CHESTER, Jan. 2, 1855.

J. LACEY DARLINGTON, ESQ.:—The cause of sterility in Free-Martin cows having engaged the attention of a gentleman of science, who had never seen an article purporting to explain it, through his instrumentality I was placed in possession of the genital organs of a heifer of this description for examination. The result of which being deemed important to your readers as breeders of stock, I have concluded to send them to you with a drawing of the parts for publication.

Webster describes a Free-Martin cow thus:—"When at twin births the mother has a male and the other apparently a female, the latter is most generally (but not invariably) barren, and, on dissection, will be found to have some organs of each sex, but neither perfect."

Among most of the farmers a cow of this character is deemed invariably sterile, and if the organs of all were like the one examined, it would not be surprising that such should be the case, but this most probably is not so. To enable us to satisfy ourselves and to settle the question satisfactorily, I would request of those who may have, or know of any one having in their possession, an animal of this kind, that they will, when slaughtered, forward the organs of generation to your care for further examination.

The annexed sketch will more clearly demonstrate the condition of things found as described below:



A. Vagina or funnel.
B. Cordy condition of peretoneum.
C. C. Cornua.
D. D. Impervious fallopian tubes.
E. E. Ovaries or pink colored bodies.
F. F. Continuation of pink colored bodies.
G. G. Peretoneum.
H. H. External parts with their hairy investment.

The organs having been carefully examined externally, the dissection was commenced at the external orifice of the vagina, A (or funnel as it is commonly called among farmers,) and opened longitudinally to the extent of seven inches, where it terminates in a cul-de-sac; funnel shaped; the apex being at the upper internal part. The diameter of the external orifice when laid open was three inches. Above the termination of the vaginal canal there was to the extent of five inches no opening, but simply a thickened cordy condition of the peretoneum, B, when there commenced a cavity lined by mucous membrane, and running out at acute angles, two cornua, C. C., three and a half inches long, the right one inch, the left three-quarters of an inch, in width. At the upper external angle of these hollow cornua were found abortive fallopian tubes, D. D., impervious, of one and a quarter inches long, when a pink body, one inch in length, E. E., and one-half an inch in thickness, supposed to be imperfect ovaries were found, they tapered down to a line of the same color, and continuing about three inches they were lost in a duplicature of the peretoneum, F. F.; G. G. shows the peretoneum spread out; H. H. shows the external parts covered with their hairy investment.

Such is a brief account of the result of the examination made, and contains all the important facts elicited. It will be seen that no womb was found, an imperfect vagina and ovaria, with impervious fallopian tubes, and no evidence of the fimbriated extremity of these tubes. It will not, therefore, be thought strange that amid all this imperfection on the parts of nature to adapt her organs to the accomplishment of such a complex process as that of reproduction, that she should be sterile.

That all Free-Martins are organized in the same manner is hardly possible; there may be other changes from a normal condition of the parts than was found in this case, yet explaining as clearly as this the cause of their sterility, and it is to be hoped that the farmers, who are to be benefitted by the investigation, will interest themselves in procuring specimens for a more thorough elucidation of this subject. Yours,

WM. H. WORTHINGTON.

For the Farm Journal.

Out West---State Fairs---National Cattle Show, &c.

Many departments of the Ohio State Fair were deficient in consequence of the extremely dry season. Of live stock throughout there was a very respectable show; the grounds and fixings were good, but the railroad facilities and the small, town accommodations were not equal to the occasion; yet if we could get a rail to sleep on and a yard of tape for covering for fifty cents, we should not complain. There was much of the game played there that was complained of at our State Fair—of a whole neighborhood coming in by one ticket or badge. The plan adopted at the National Cattle Show at Springfield, Ohio, was much more effective. They sold to persons for the three days admission three tickets for one dollar, marked Wednesday, Thursday and Friday; and on entering give up one of the tickets each day, and should you wish to go out and return the same day, an officer was at the gate with little *exit* tickets which he would give you to be given up again on your return. This plan, I believe, had the desired effect, and this or some similar plan will have to be adopted at fairs generally to avoid so much fraud. The single tickets at this show were 37½ cents. I was much pleased with the exhibition throughout at the National Cattle Show, but as an account of it has already been published, I need only say that we had a fine *big* dinner on the ground, and some short but very fine speeches upon agricultural subjects by Gov. Wright, of Indiana, Cassius M. Clay, of Kentucky, Ashew, of Canada, Allen, of New York, Holcomb, of Delaware, &c. The inhabitants of Clark county, where the cattle show was held, are quite ambitious upon the improved cattle subject, and have some very fine imported Durhams—one of which I saw, a two-year old bull, cost $3500. This is a fine district for stock. The Mad River valley passes through it, and affords fine pasture. This and the adjoining county of Montgomery are thickly settled, being about sixty-two persons to the square mile. There is a great deficiency in farm building, there being very few barns or good shelter for stock; no where else could I find such buildings or agricultural improvements as are to be found in eastern Pennsylvania. In Wayne county, Indiana, I saw some pretty well done up farms, and some fine lots of improved sheep and cattle. Governor Wright has a large room in the capitol at Indianapolis wholly occupied as a Farm Library, with thousands of volumes on the subject of agriculture, minerals, implements, &c., and seems to take pride in showing these things to persons interested in the subject. He is President of the State Society, and takes quite an interest in promoting agricultural improvement.

Corn and pork is the principal staple of this State, and Cincinnati is their chief market, to which they have one railroad finished and one or two more in progress. The dry season has shortened their corn crop, which will necessarily shorten the pork crop. Corn will be scarce in Ohio and Illinois also. Railroads in those States are numerous, running in every direction, connecting at almost every place of any importance, and I should judge from the amount of travel and freight, that they are generally good stock. There are some very extensive farmers in Illinois, who occupy and stock from 500 to 2,500 acres. Many thousands of cattle are fattened, drove to Chicago, slaughtered, and packed for foreign markets; and many thousands drove east and west to furnish beef for the seaboard towns and stock for the new States and Territories. Iowa is settling so rapidly that it takes many thousand cattle annually to supply them with stock. They have rich land there, but a great deficiency of stone and timber for building, &c. The State is chiefly prairie, and too cold and dry through the winter for winter wheat. They sow spring wheat, and while there in October I did not see a green field in the State. The grass, principally prairie, was all dead and dry, and many hundreds of acres of it on fire. They burn off the old grass every fall. Land sells from $1 25 to $40 per acre, according to location and improvement.

I was somewhat surprised that the farmers of these States (whose principal business is pork growing,) had paid so little attention to improving their hogs; they might just as well have a breed that would make fifty pounds more pork per hog with the same feed. There are a few exceptions among the Ohio and Indiana farmers—they have made some valuable improvements, which I think others would do well to follow. Where a farmer kept from 50 to 500 hogs, if he got a breed that only made five or ten pounds more it would be quite an object, and would pay well for a little extra expense in procuring a pair or two from a distance.

Agriculture being the *business* of the United States—five million of farmers now being engaged in it—and more capital employed in it than in all other pursuits combined, and what have the agriculturists received from Government, which is every year making appropriations to advance almost every other important or unimportant branch of business. They have given us only the Patent Office Reports, good enough as far as they go, but, unless a prominent *political* farmer, we are not likely to see even that. We want more aid, we ought to ask for more, we ought to, and we will, insist on more. If it is because we have so few farmers in the National Legislature to urge our claims we will send more there. We want an Agricultural Bureau established—a national one—to give its undivided attention to rural affairs. We want an Agricultural College, Experimental Farm, &c., with publications to issue, teeming with agricultural knowledge, and so directed that every farmer may re-

ceive benefit therefrom. It would take but a small pittance of government funds compared with those expended in unimportant expeditions, &c. Governments generally legislate for and aid the agricultural interest of their constituents, but the United States agriculturists work independent of government aid. They sustain more agricultural papers than all the rest of the world. These papers are doing a great good, and should receive aid from every farmer. THOMAS WOOD.

Penningtonville, 12th mo. 18, 1854.

To Destroy Moles.

To the Editor of the Farm Journal:—I take this opportunity of answering the enquiry of John Kelsey in the December number of the Farm Journal. In the springs of 1850 and '51, I was annoyed with moles and ground mice beyond endurance. My garden, and even my potatoes, were subject to their depredations. I first tried trapping, but all to little or no purpose. I next set about discovering a remeny in the shape of poisoned corn, which proved a very effectual one. I procured some of the roots of the plant known by the name of hellebore; I then boiled it in a sufficient quantity of water to make a strong liquor, and put the corn to soak in it until perfectly swelled, when it is fit for use; and to my great satisfaction it entirely enterminated all moles and ground mice. It is also very good to stop Mister crow, black bird, or chicken, from taking up corn in the field. It will kill every thing that eats it, and it does not appear to hurt the germination of the corn, providing the corn is not put to soak while the liquor is hot. Yours truly, HWD. WILLIAMSON.

Willistown, Dec. 9th, 1854.

For the Farm Journal.

Cheap Ice House.

As many farmers have probably neglected the building of a substantial and commodious ice house in the proper season, I propose a cheap and convenient mode of constructing a small ice house for domestic purposes.

The two most important requisites in a family ice house are, exclusion of surrounding atmosphere and rapid drainage. There is some disagreement as to which, on the whole, is the best, an ice house built wholly above, or partly below the surface of the ground. Either plan though, if properly constructed, will preserve ice according to their capacity, in the warmest seasons.

The following is about the cheapest plan of preserving ice, all things considered, in use: "Select a dry site—clean off a spot eight feet square—in each corner plant a post. Let the front posts be ten feet high and the back posts seven, which will give three feet of a slant for the roof—fasten any common boards to the outside of these posts by nailing them or otherwise—extending them to the roof on all sides except the front, which may not be extended higher than seven feet, allowing the remaining three for ventilation and passage way.

The hull of your house being finished, you commence in the inside by placing a layer of sawdust in the bottom, twelve or more inches deep, over which place some loose boards to support the ice—on these boards you place a tower of ice six feet square, which leaves a space of one foot between the ice and the wall, which is to be packed tight with sawdust—all the crevices between the ice in packing should be closely filled up with the same, and about eighteen or twenty inches on the top—the whole to be capped with a good water proof roof, and it is finished." J. GORSUCH.

Cambria co., Pa., Dec., 1854.

The Crawford County Agricultural Fair.

In our notices of Agricultural Fairs we omitted that of Crawford county, or rather we had not the data from which to compile a notice—neither letter nor newspaper containing a report reaching us in season. Our friend R. Lyle White, Esq., of the "Banner," recently supplied this deficiency. We append the principal paragraphs of his editorial notice. Mr. White will please accept our thanks for this and other favors:

"The exhibition of stock, especially cattle, cannot be excelled, if equalled, by any county in the State. It did more credit to the enterprise and judgment of our farmers than any thing else at the Fair. We have attended a good many Fairs, but never saw a better show of cattle. In this respect we believe Crawford county is ahead of any other in the State.

"The exhibition of swine and sheep was just about so so—nothing extra—if any thing it was inferior to any we have seen heretofore in other places. There is great room for improvement in both those classes of stock.

"There was quite a large number of horses on the ground, but not more than one-half of them were worth taking to a Fair. The better portion of them made a very respectable appearance, and their owners deserve credit for the pains they have taken to secure good stock. We are far from believing, however, that the exhibition of horses was a fair show of what our county can do in that line. From the interest manifested in that department we may look for something rare next year. This part of the exhibition was pronounced by those from a distance to be superior to any of the kind they had witnessed in New York State or Ohio. The same remark was also made in regard to the cattle show.

"The show of crops, fruits, vegetables, &c., was tolerable—nothing more—but was as good as could be expected this year. We noticed two or three specimens of corn which were very good—what was of them. The specimens of grapes were as good as can be seen any where in this section of the Union, or perhaps any other.

"The poultry was fine. The Shanghaes and other long-legged species predominated, but whether they will be in the end considered the most profitable remains to be proven. The Society offered no premiums on Poland fowls, and none of that kind were exhibited; but we venture the opinion that they are the most profitable and handsomest species of poultry in the country.

"The ladies' department of the Fair was very good, but the chance to see what they exhibited was very poor. We hope the Society will make better arrangements for them hereafter. Their exhibition of manufactured and fancy articles was as far ahead of that of the "sterner sex" as it well could be. Quilts of the most beautiful style, tidies of the neatest workmanship, and a thousand articles of utility and beauty, were spread before the

admiring gaze of the multitude. Quite a large quantity of house plants were exhibited, which did great credit to the taste of the owners.

The display of horsemanship was by far the most exciting and interesting part of the Fair. The ladies' horsemanship was the grand feature of the day, and was witnessed by 7000 or 8000 people. The contest was long and doubtful, but was finally decided in favor of Miss Lawrence amid the cheers of the immense crowd."

Hop Culture.

[CONCLUDED FROM PAGE 18.]

"Fifty pounds of hops, when dried, is the largest quantity that should be dried at one time, on a kiln of this size; and unless absolutely necessary to put on that quantity, a less would dry better. The green hops should be spread as evenly and as light as possible over the kiln. The fire at first should be moderate, but it may be increased as the hops dry and the steam is evaporated.

"Hops should not remain long in the bin or bag after they are picked, as they will very soon heat and become insipid. The hops should not be stirred on the kiln until they are completely and fully dried. Then they should be removed from the kiln into a dry room, and laid in a heap, and there remain, unmoved and unstirred, until bagged, which is done with a screw, having a box made of plank, the size the box is wished, into which the cloth is laid, and the hops screwed into the box, which is so constructed that the sides may be removed, and the bag sewed together while in the press.

"The hops, after laying a few days, will gather a partial moisture, called a sweat. The sweat will probably begin to subside in about eight days, at which time, and before the sweat is off, they ought to be bagged in clear dry weather. As the exact time when the hops will begin to sweat, and when the sweat will begin to subside or dry off, [the proper time to bag them,] will vary with the state of the atmosphere, it will be necessary to examine the hops from day to day, which is easily done by taking some of them from the centre of the heap with your hand. If on examination you find the hops to be very damp, and their color altering, which will be the case if they were not completely dried on the kiln, and not otherwise, you must overhaul them and dry them in the air.

"The most convenient size for a bag of hops, to handle and transport, is about five feet in length, and to contain about two hundred and fifty pounds. The best bagging is coarse, strong tow cloth, of our domestic manufacturing; next to that, Russian hemp bagging. The East India sugar and gunny bags, so called, ought never to be used. The sugar bags are of an unreasonable weight, and both they and the gunny bags are of no value to the brewer; whereas the other bags are worth prime cost.

"It is now common for those who have entered considerably into the cultivation of hops, to build houses over their kilns, which, in wet weather, are very convenient; otherwise, a kiln in the open air would be preferable. It is necessary to have these buildings well ventilated with doors and windows; and to have them kept open night and day, except in wet weather, and then shut those only which are necessary to keep out the rain. If a ventilator was put in the roof of the building, directly over the centre of the kiln, about six feet square, built like those in breweries and distilleries, they would be found very advantageous. I have seen many lots of hops much injured both in color and flavor by being dried in close buildings.

"Where the houses over the kilns are built large, for the purpose of storing the hops as they are dried, which is a great saving of labor, a close partition should be made between the kilns and the room in which the hops are stored, to prevent the damp steam from the kilns coming to them, as it will color them, and injure their flavor and quality very much.

"I expect that many of our farmers will object to the mode of manuring hops which I have recommended, their common practice being to put the manure in the hills when they plant the hops, and afterwards to apply the manure on the hills at the first and second hoeings. I find the hop-roots are very liable to be injured by the worms, and to decay. My opinion is, that the manure in the hill has a tendency to produce the worms, and its fermentation at their roots to cause their decay; and that the crop is not more, if as abundant, as when manured in the manner I have recommended; and, farther, that a hop-yard manured in this manner will continue in a healthy state for many years.

"I also expect the quantity of manure I have recommended will be objected to by many, it being the commonly received opinion, that hops should have little or no manure. I find it a general complaint amongst the farmers where hops have been cultivated many years, that the quantity raised per acre does not exceed the one-half raised by their ancestors on the same land; inferring that the 'hops are running out,' as it is termed, and cannot now be cultivated to advantage. Hops, in common with all sorts of grain and vegetables, flourish best and produce the finest crops when cultivated on new lands, which require little or no manure; and such were the lands which their ancestors cultivated. The same complaint, I presume, would be made against all sorts of grain and vegetables, if raised with little or no manure, on lands that have long been cultivated."

Practical Hints about Poultry.

Whether the large sized varieties of fowls which "are all the rage" now amongst fancy breeders and dealers, are really preferable to the old-fashioned barn-yard fowls, is a subject of which there are two opinions among those who have tried both. To say nothing of the enormous prices which they occasionally command, they weigh heavily in the market scales, or fill a large platter on the dinner table. But on the other hand, they are great gormandizers themselves, and are generally considered difficult to raise. Roosters should be changed as often as once in two years, if not annually; and pains should be taken, in replacing them, to procure strong, healthy and perfect birds; the hen will lay better, and hatch more chickens. Only a small number of hens should be kept in one house, or together. We have known repeated instances in which keepers of poultry have become disgusted at their failure to lay, and have determined to kill them off. They have com-

menced reducing the number, which was perhaps forty or fifty, and when they got down to half a dozen, were surprised to find every one of the hens laying, and the supplies of eggs for the family better than the whole number furnished. As to profit, we doubt whether, if all their food be bought, the eggs and chickens produced by any breed, and sold at the regular market prices, for the table, will pay the expense of keeping, but it by no means follows from this, that hens are not a source of profit on a farm. They eat much of what would otherwise be entirely lost and wasted; and a small patch of buckwheat, sown at a trifling cost, and left on the ground where they can stroll over it and feed at their pleasure, will keep them as fat as butter. The main point is, the great value of the manure of poultry. The hen-roost is the place where most farmers should go for their guano. If obtained there, it will invariably prove of good quality. There need be no fear for those who get their guano from this source, that it will turn out to be spurious or inferior.

We doubt whether even intelligent farmers would estimate at more than one-hundredth part of its amount the quantity of excellent manure, which can be made in this way in the course of a year. The hen-roost, duck-roost and turkey-roost should be supplied with several loads of peat, swamp muck, or both, spread evenly over the surface of the floor, and on this there should be scattered a thin layer of sand or gravel. On rainy days, when the work can be done as well as not—and as often as practicable—this should be all shoveled over, and the manures thus mixed with the other ingredients. The compost soon becomes strong, when it can be removed, and fresh supply of suitable material thrown in. The house is kept sweet, clean and healthy for the fowls; and if any farmer will adopt this plan, and practice it faithfully for five years, and keep an accurate account of the crops raised directly from the compost made with the poultry manure, and from the manure made by feeding those crops out in their turn, he will be amazed at the amount of each which he will have realized, and at the permanent improvement of his farm.—*Londonderry Standard.*

Orchards, Apples, and the Market.

"David, I am going to quit the nursery business. In twenty-one years fruit will be a drug in New York city. Why, every body is setting out orchards. Just look around this neighborhood! There is deacon Jones has just set out 500 trees; Tom Smith 400, and his brother Jim will have 1000 next spring, and so on at that rate all over the country—grafted fruit, too, none of it for cider. Now what do you suppose is to become of all these apples? I tell you what it is, David, we must wind up the nursery business or we shall break flat. Every body is going crazy about fruit. Every body will grow it, but no body buy it, a few years hence."

This prognostication was made more than twenty years ago by a sensible man engaged in propagating choice fruits for sale in Central New York, and no doubt the speaker honestly believed the days of the nurseryman were well nigh numbered. Brother David, however, was of a different opinion. He did not believe it was so easy to overstock the market with such fruit as no other than American soil and climate can produce. He did not believe 'ere twenty years' time would elapse every body would have an orchard, the products of which would be so unsaleable, and the business so unprofitable, the owner could have no desire to plant more or better, or newer varieties of trees; consequently he urged that the business should be perseveringly continued until the dawning of the evil day was more visible in the horizon.

What has been the result? A sale of 40,000 apple trees and 7,000 of other fruits during the planting season of last year, and the prospect for the next equally good. The very men who had planted 500, have increased 1000, and some of them have doubled that tenfold; and yet the market is now better than it ever was before for all the choice varieties of the product of orchard, vineyard, or garden. The market is not yet glutted, nor can it be while millions of mouths continually water for the luscious fruits which contrast so advantageously with the sour crabs, "five to a pint," which filled the market twenty years ago. The market cannot be glutted with such fruit as the Newtown pippins, Roxbury russets, Rhode Island greenings, Baldwins, Bellefleur, Swaar, Domine, and a great variety of other excellent winter keeping apples; while the luxury-loving mouths of old England are within two weeks (we have done counting distance by miles,) of the fruit bearing hills of New England. Nay, not only New England and New York, but the ever bearing trees of the rich plains of that once far away western wild, known in our boyhood as New Connecticut. But still the market is not glutted, nor will it be, though all Ohio, Michigan, Indiana, Illinois, and Wisconsin, shall pour in their golden treasures of golden pippins from their unbounded plains of the richest fruit bearing land the world ever saw, while that same world full of people possess the taste they now do for choice, delicious fruits.

Our advice, therefore, is, as it has always been, to every man who owns an acre of land—plant trees. Don't be afraid of overstocking the market with any kind of fruit, except such as your fathers used to grow, and some of you still perpetuate; because the refined and improved tastes of the world demand, and will have, if it is procurable, the best that can be grown.—*Oswego Journal.*

Wintering Young Cattle.

If you wish to raise well sized, full developed animals, you must give the young creatures plenty of food. When we say *plenty*, we do not mean that you should keep them fat like show beeves, for that would be an unhealthy condition; but we mean that you should keep them in good growing condition—that you should so feed them as that they shall have wherewithal to build up their frames.

Cure for Ringbone.

I noticed in the Cultivator for May 15th, an inquiry for the cure of a ringbone in a colt, and answer, take high wines of cider brandy, add saltpetre as much as will dissolve, and wash the ringbone two or three times a day. One of my neighbors cured one of three or four years' standing, by the application of this a few times.—*Boston Cultivator.*

Work for the Month.

FARM.—February is usually the last month of leisure previous to commencing active operations on the farm; but it frequently happens that there are several weeks of open weather, which enables those who have not had their corn ground plowed to do it now. It is necessary, however, to guard against plowing when the ground is *too wet*. Teams that have stood idle for some time should be gradually inured to work. We have frequently known horses, kept stabled during the winter, and when spring opened put to constant work, lose much of their flesh, and not pick up again before harvest. A little foresight now may prevent the necessity of hurry and over exertion a few months hence,—such as having a full supply of wood for the entire season cut up, fences repaired, implements put in proper order, stones picked from mowing lands when necessary, drains opened, &c., &c. In a word any thing that can be done to advantage; but which necessarily need not be done for two or three months, however, should not be put off. This is a period of comparative leisure; that of compartive labor.

FRUIT ORCHARD.—Take off cuttings of gooseberries and currants, and bury them two thirds of their length in the earth, until wanted for planting out; also quince cuttings, grafts of apple, pear, plum, cherries, and peaches, may now be taken and preserved in damp saw-dust, or earth till wanted. The two last must be cut before any swelling of the buds has taken place. Grafting the cherry will not succeed unless performed very early. Budded peach trees which have missed may be successfully side grafted if the buds have not swollen. Mulch during this month of comparative leisure, all young fruit trees. Pruning may now be attended to. Head down all apple and other trees of worthless varieties which are for grafting and forming new tops. Leave some of the lower branches for removal another season. If the limbs are too large for grafting, the young shoots which will be thrown out, may be budded the following fall, or reserved for grafting the following spring. Two seasons, at least, should be occupied in changing the heads of large trees. A pole pruning-saw, pole-chisel, and pole-pruning-shears, are necessary to perform this operation thoroughly. Cut out all inside shoots and branches, which crowd the head, and are useless. Those limbs which have free access to sun and air are the fruit-bearing and productive ones. Branches should radiate from the trunk, something after the fashion of an umbrella. When large limbs are removed, coat the surface of the wound with shellac dissolved in alcohol, to about the consistency of paint. Go round every peach tree and shorten in the last year's growth about one-third, with the pole pruning-shears. This has been very fully proven to result in larger and finer fruit, and may be applied to other trees beside the peach. Apply the wash, before recommended, to the trunk and large limbs. Grape vines should be pruned without delay. Trim gooseberries and currants, by cutting out old wood and branches near the ground, so as to give somewhat of the tree shape. Cut off at the ground old raspberry wood of last year's bearing, and shorten in the new growth one-third. Leave only four or five stalks to each plant. Raspberries must be well manured to be productive, and moved to a new place at least once in five years. If frost should be out of the ground by the last of the month, strawberry beds may be raked over, and short manure dug in between the rows. A good coat of ashes should be spread over the whole bed.

FLOWER GARDEN.—See directions for previous month.

VEGETABLE GARDEN.—Manures should now be composted and prepared for frames. Turn over occasionally to allow the hot steam to pass off. From the middle to the last of this month, frames may be set up, and some cabbage, lettuce, radish, tomatoes, egg-plant and pepper seed sown for early planting. The two last require rather more heat than the others, and should have a separate frame, and never allowed to become chilled. Select a sheltered place for hot beds on the south side of a building or a tight fence. After seed is sown constant attention is required. Cover with straw mats in nights and in cold weather, and give air occasionally on fine days. Should it be necessary to let off steam, cover with something to keep out the cold, and prevent a check to the bed or plants Radish and beet seed, early vaieties, may be sown on a rich warm border in open ground, for early use, as soon as the frost is out of the ground. Cover with straw in severe weather. By the latter part of the month, extra early peas may be planted in rows for early crop, and also potatoes. Rhubarb may be forced by covering the plants with a barrel and filling up with manure. Continue to give air on fine days to plants of last year's sowing, in cold and forcing frames. By the last of the month, if the weather is open, fork in manure on asparagus beds, give a plentiful dressing of salt.

Fine Devons in Pennsylvania.

We are gratified in being able to announce the arrival in our State of some superior thorough bred Devon stock, recently purchased by George F. Curwen, Esq., of Montgomery county, from the select herd of the Messrs. Wainwright, Dutchess county, New York. They consist of a very superior bull, bred by Mr. George Turner, of England, and three cows, *Cherry*, *Rose* and *Ida*. Cherry is nine years old, from an imported bull and cow, and has milked twenty quarts per day. Her calf last spring was sold for $175. Rose, five years old, out of Cherry, by the celebrated prize bull Major, will calve in next July. Ida, two years old, out of Rose, was gotten by Mayboy, the bull imported by the Messrs. Wainwright.

We congratulate the farmers of our State upon the introduction of this superior stock. There is very little of pure Devon stock in Pennsylvania, and it is a breed of great value in several particulars. The high price of stock cattle from the west, which our grazers are in the habit of buying from the drovers, in order to give them a coat of fat in Pennsylvania, and prepare them for the butcher, makes it profitable and economical for us to turn our attention to introducing improved breeds, and raising our own.

Let any one examine the history and expense of rearing and feeding the magnificent oxen of George Brinton, Esq., engraved in the last number of the Farm Journal, and it will be seen that less feed will make more weight, and of a better quality, and commanding from the

butcher a higher price, at a given age, than the ordinary, and often ill shaped, common stock from the drover.

The rapid settlement of lands in the west has diminished the supply of stock cattle eastward, and turned it westward. We believe, by using improved breeds, having suitable protection in the barnyard, devoting a certain space to root culture, and stimulating growth of calves a little during their first year, when they most require it, many of our Pennsylvania farmers will find it to their interest to raise instead of buying their stock.

Mr. Curwen's address, for those who wish to make enquiry about Devons, is West Haverford P. O., Delaware county, Pa.

Coveney's "Economical" Manure.

This article enjoys a reputation in England similar to some of the patent manures of this country, and like the latter, although advertised as adapted to all soils and all articles of vegetable growth, it not unfrequently entirely fails in producing good effect, but even sometimes proves deleterious. From the following report of a trial in the Court of Exchequer, the defendant was released from payment of the cost of the manure on the ground that he received a spurious article, although he obtained it at the manufactory of the patentee. Some of our correspondents who complain of not receiving the returns expected from superphosphates, &c., may find in the verdict a possible cause:

COURT OF EXCHEQUER—WEDNESDAY. (*Sittings at Nisi Prius at Guildhall, before the* LORD CHIEF BARON *and a Common Jury.*) COVENEY VS. LOVICK.—Mr. M. Chambers and Mr. James appeared for the plaintiff; Mr. Atherton and Mr. Holl for the defendant. The defendant in this action is a farmer, who occupies 600 acres of land in Norfolk, under the Earl of Leicester; and the plaintiff is the agent of a M. Papillot, a manufacturing chemist, and the inventor of the British Economical Manure, which it is almost unnecessary to state was, in the language of the advertisements, endowed with every fructifying quality that can be conceived, as well as the advantage of drawing to the soil the moisture of the atmosphere. Attracted by these, Mr. Lovick purchased a considerable quantity for 77*l.*, applied it to dress his turnip land, and waited anxiously for the result. In due course the turnips came up; but instead of attaining the corpulence of a turnip, they never exceeded that of a good-sized radish, and for the most part were never gathered. The season, moreover, was very dry, and the moisture which ought, under the influence of the manure, to have been deposited, remained, so far as the defendant was concerned, with all its other advantages, *in nubibus.* Such being the state of things, the defendant refused to pay the price, on the ground that the article furnished was not the genuine British Economical Manure. The fertilizing powers of the real thing might be, and probably were, excellent; but if that were so, Mr. Lovick had not received what he had ordered, and was not, therefore, bound to pay for it. On the other side arguments were used to show that the ingredients of the manure had beed misused by the defendant himself, by being mixed in improper proportions, and that the plaintiff could not be responsible for the defendant's negligence. The jury eventually gave a verdict for the defendant, expressing their belief that he did not get the genuine Economical Manure.

Mildew on Gooseberries.

My father had some nice gooseberry bushes; every year they would blow and show a fair prospect of fruit, until they would be about half grown, when they would all mildew, and not one be fit to eat. This state of things continued for several years, when we happened to hear that to pour strong soap suds over the bushes, once or twice a week, when the fruit was setting, would prevent the mildew. Last summer we tried it, and the bushes fairly bent with fruit, which would fairly make one's mouth water, instead of their eyes as before. A neighbor of ours had gooseberries which mildewed in the same way. Last spring, while cleaning out his stove pipe, the idea was suggested of putting the soot upon the gooseberry bushes. It was accordingly done, and the result was he had gooseberries without mildew.

Rockport, Pike co., Ill. H. B. S.
—*Genesee Farmer.*

New Food for Sheep.

Whilst I was at Geneva, I observed every one collecting carefully the fruit of the horse-chestnut, and on inquiry I learned that the butchers and holders of grazing stock bought it readily at a certain price per bushel. I inquired of my butcher, and he told me it was given to those sheep in particular that were fattening. The horse-chestnuts were well crushed; something in the way, so I understood, that apples are previous to cider being made. They are crushed or cut up in a machine kept solely in Switzerland for that purpose; then about two pounds' weight is given to each sheep morning and evening. It must be portioned out to the sheep, as too much would disagree with them, being of a very heating nature. The butcher told me that it gave an excellent rich flavor to the meat. The Geneva mutton is noted for being as highly flavored as any in England or Wales.
—*Agricultural Gazette.*

To Promote the Health of Cattle.

Feed all animals regularly. They not only look for their food at the usual time, but the stomach indicates the want at the stated period. Therefore feed morning, noon and evening, as near the same time as possible.

Guard against the wide and injurious extremes of satiating with excess and starving with want. Food should be of a suitable quality, and proportioned to the growth, and fattening of animals, to their production in young, and milk, and to their labor or exercise. Animals that labor need far more food, and that which is far more nutritious, than those that are idle.

In dry time, see that the animals have a good supply of pure water. When the fountains are low, they drink the drainings of fountains, streams, and passages of water, which are unwholesome.

If barns and stables are very tight and warm, ventilate in mild weather, even in winter.—*New England Farmer.*

Cultivation of Colza, or Rape Seed.

BY F. N. NAUTTS.

[CONCLUDED FROM PAGE 32.]

If the land, as I suppose it is, is good, i. e. has been properly manured for the previous crops, wheat, oats, &c., there will be no occasion to manure it now, but if not, have your manure laid in heaps, and throw a little at the root of every plant, a handful will be sufficient, or, which is preferable, by throwing a handful of guano, previously well mixed with four times its bulk of earth, or a good handful of any good chemical fertilizer, at the foot of every plant, the produce will be large, and the seed of good quality; in transplanting it will tell all the better in the crop, to roll the roots of the plants in plaster of Paris, or ashes, or both mixed.

When the Rape is reaped, then sow turnips; thus three profitable crops can be got out in two years from the same piece of land, and the last two will improve your land.

As observed above, Rape on land makes one of the best preparations for wheat, but in this latter instance, I prescribe a crop of turnips after it, it following probably wheat, or at least a grain crop.

The above is the management of *Winter Rape;* there is another variety, called *Spring* or *March Rape*—this is cultivated and handled in every respect as the former, with this difference, that it is sown early in the Spring, March or April; hence its name, Spring or March Rape or Colza.

It does not yield quite so large a produce as the Winter Rape, nor does the seed yield as much oil, but as it can be sown in the Spring, and harvested at the latter end of Summer, or early Fall of the same year, it thus has great claims to our attention and care. It requires the same quantity of seed as the Winter Rape.

The Rape plant is not only of great value in the economy of the farm, as one of the best plants for fodder, as after thrashing the seeds out, the plant is valuable, and yields a large quantity of nutritious fodder, relished by all kinds of stock, but it is as invaluable as a plant yielding one of the best and most prolific of all oleaginous seeds, *that* is the main point to be considered and employed, and must attract our most earnest and dilligent attention, besides the cultivation of it being, as observed above, a good preparation of the land for cereal or grain crops.

The Rape is likewise extremely valuable for the residue or cake left after expressing oil from the seed, which is used extensively for feeding and fattening cattle. It forms likewise one of the most powerful manures, being extensively used in Europe, and the effects of it are as immediate and powerful as the best and most concentrated manures hitherto known. It is as immediate and powerful as guano, with this difference, that it benefits after crops more than guano does. As a feed for cattle, it cannot be surpassed in its fattening qualities; pound for pound it has a greater effect than the fresh seed itself.

It is in the manufacture of oil from its seeds, that it deserves to have a distinguished place among the profitable crops, profitable not only from pecuniary advantages, derived directly from its cultivation, for in supposing that only a minimum crop of twenty bushels should be raised, still, as the price is generally nearer and sometimes over $4, than $3½; such a low crop even at $70 gross per acre, is certainly no despicable figure, when taken into account that the value of this fodder will go nearly to pay the expense of its cultivation, but the manufacture of its seeds into one of the best and most valuable oils, gives it a claim to great preeminence, by the great services it thus renders to agriculture, and to manufactures.

The Rape Oil is one of the most valuable oils known in the arts and manufactures; at once serviceable for burning, eating, fulling, for the tanner, for the soap boiler, for machinery, &c., &c.

This oil used for machinery, properly prepared, does not gum as other oils do.

Already is the attention of government directed to it, to supply our light-houses on the coast, with a good burning oil, as fish oil is constantly raising in price, and whale and sperm fish getting scarcer every year, and particularly should it happen, in the natural course of events, that the price of fish oils gets affected by the political changes which often (against all calculations) are of such a nature as very materially to affect and enhance the price of all articles and produce which we derive through our navigation, and which would particularly affect the price of oils, and raise them.

In the article of oils, the prices would rise immeasureably, not having as yet established the cultivation of plants, to supply us with this, an article of the first necessity.

We may then, and at a profit of manifest advantage, establish among us the cultivation of a most valuable plant, for which the soil and climate of this country are favorable.

Any one desirous to make a trial with one acre or more, can obtain the seeds, either of the Spring or Winter Rape, from C. B. Rogers, 29 Market street, or Paschall Morris & Co., 269 Market street, Philadelphia, at 25 cents per pound; at either of which places I may be addressed.

As has been shown, the raising of Rape Seed is very profitable when carefully attended to; the manufacturing the seed into oil is no less so, so that to a certain degree, combining the two together, can not fail to be highly remunerative, and as worthy the attention of the capitalist as any agricultural product with which we are acquainted.

The solicitude with which the United States Government are trying to introduce the cultivation of Colza or Rape Seed, makes it desirable that some one or other should be spirited enough to attempt its cultivation. The impotent plea hitherto set up that it will not succeed in this country, is frivolous and not attested by facts; the contrary I can prove by any one paying me a visit, in Atlantic county, New Jersey, where I have a small field growing beautifully. In my reproduced article, cited above, I prove what can be expected, as true returns in cash. Therefore I exhort all who love their own interest, if nothing else, to make at least a trial.

I will continue to describe monthly, if possible, all the oleaginous seeds that can be raised successfully here, and any information about these matters I will cheerfully communicate.

Pennsylvania Horticultural Society.

The stated meeting of this society was held in the saloon of the Assembly Buildings on Tuesday evening last, the President in the chair. The severity of the weather precluded all attempt at a display of greenhouse plants. A couple of interesting specimens were brought by Mr. Cope's gardener—the *Angræcum Bilobum*, an air plant, and *Nymphea Cœrulea*, and for the first time seen on the tables of the Society. The same contributor had a beautiful basket of cut flowers and a pair of hand boquets. Mr. Knorr's gardener, exhibited three hand boquets not in competition. Of fruits—Mr. Vickroy had a fine display of Apples; Mr. Baxter a collection of Pears, and Mr. Pettit a dish of the Niles pear. Mr. Felton—a display of Vegetables. Mr. Baldwin's gardener, some fine forced Lettuce, Redishes and Cucumbers; and Mr. Tucker's a brace of Cucumbers. A small package of interesting cereal grains of California, from Messrs. Cummings & Co., of San Francisco, were on

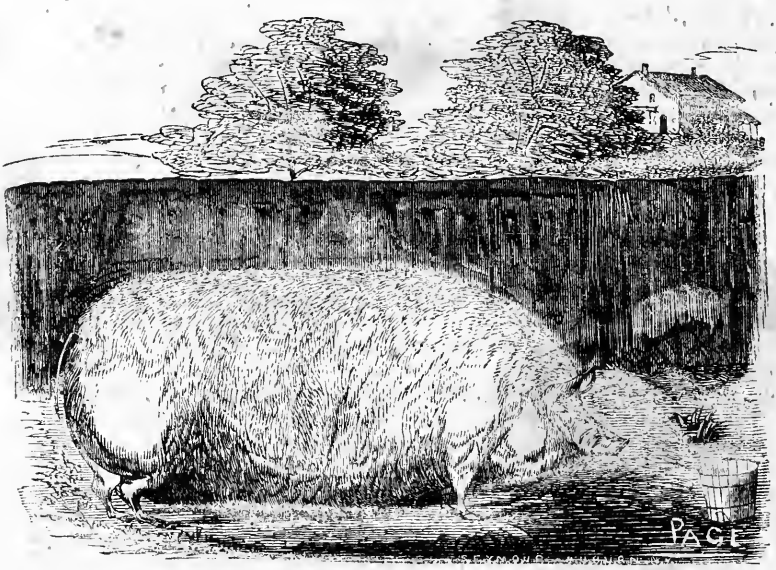
the table. Specimens of wheat the yield of which was represented to be 60 and 66 bushels to the acre, the Egyptian 50 bushels, and barley 149½ bushels to the acre. Some half a dozen very large specimens of most beautifully mounted Sea Weeds were exhibited by Mr. James M. Sommerville.

The following premiums were awarded:—By the Committee on Plants and Flowers: For the best basket of cut flowers to Jerome Graff, gardener to C. Cope; for the second best pair of hand boquets to the same; and a special premium of three dollars for a plant of the *Angræcum bilobum*, shown in bloom for the first time, to the same. The Committee noticed a leaf and flower, of the *Nymphæa cœrulea*, also from the same source, and seen for the first time.

By the Committee on Fruits—For the best Pears to Isaac B. Baxter; for the best Apples to E. A. Vickroy, of Johnstown, Pa. And a special premium to Wm. V. Pettit, for fine specimens of the Niles Pear.

By the Committee on Vegetables—For the best display by a market gardener, to A. L. Felton. And a special premium of two dollars for a very fine display of Lettuce, Radishes and Cucumbers, to Mark Hill, gardener to M. W. Baldwin; and another of one dollar for a brace of Cucumbers to Wm. Thompson, gardener to John Tucker.

The Treasurer submitted his semi-annual report. The Library Committee their annual report; and the Committee for establishing premiums, a schedule for the year 1855.



FAT SUFFOLK PIG.

The above cut of a Suffolk Sow belonging to Col. Sherwood, of New York, was sent to us some months back by our friend John R. Page, but owing to some carelessness in the Express office, was not received until the form of our last issue was sent to the stereotypers. Mr. Page, who drew the sketch, assures us it is an excellent likeness.

Rich's Cast Iron Beam Plow.

The following letter from W. C. Rives, to the manufacturer of Rich's Iron Plow we copy from the Country Gentleman. We have heard similar testimony here from our farmers who have used it the past season. It opens a furrow both wide and deep, with a very light draught and can be recommended both for its strength and simplicity. One particular advantage it has, is in an arrangement, by which one beam is made to answer for two or three sizes of mould boards, which can be taken off or transfered, so as to answer for light or heavy plowing.

They are maufactured in this section of country by Messers Pennock, of Kennet Square, and are for sale, at their manufactory, at their warehouse Wilmington Del., at D. W. Entrinken's Agricultural warehouse West Chester, and in Philadelehia, at P. Morris & Co's Agricultural warehouse corner Seventh and Market street, agents for their machinery.

MY DEAR SIR.—I take pleasure in recording here my impressions of the performance of your plow (Rich's Iron-Beam Patent) at Cobham to-day. Its work was far more thorough and complete than that of any plow I ever saw in operation before. The furrow opened by it, was very generally 13 inches deep, and about 20 inches wide, in hard and close land, and most effectually and perfectly cleared out, none of the loosened earth falling back into it.

The trial of the plow was witnessed by many of my neighbors, among whom I may mention Mr. T. K. Nelson, Mr. Jas. H. Terrill, Mr. J. H. Lewis, Mr. C. B. Hopkins, Mr. Thos. Watson of Lousia, &c., all practical men and most excellent judges of agricultural implements, and there is but one opinion among them as to the superior and unexceptionable performance of your plow.

Wishing you equal success elsewhere in making this valuable implement known to our agriaultnral brethern, I am very truly and faithfully yours. W. C. Rives.

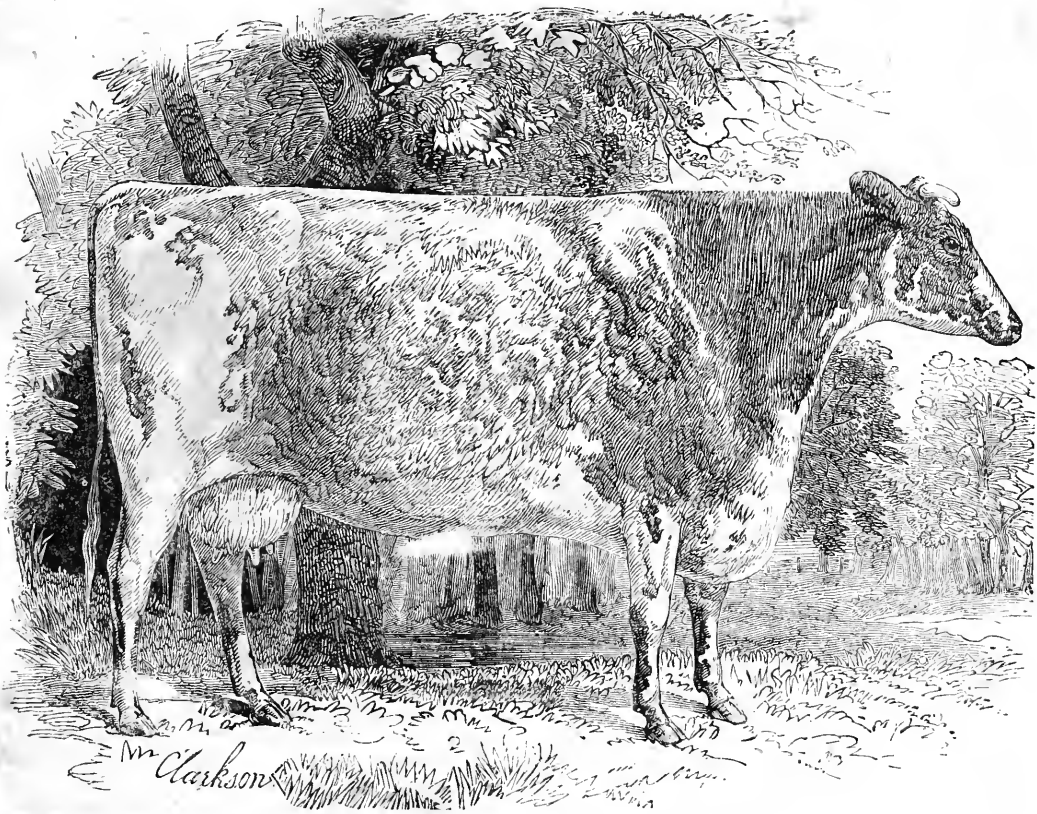
Castle Hill Va. Dec. 15th 1854.

Tartar Sheep.

In the report of the last State Exhibition our attention has been called to an error in the statement of the committee respecting the Tartar or Shanghai sheep. They say, "they breed twice a year, and have from four to six lambs at a birth." This is of course an error. They breed twice a year, but have two to four lambs at a birth instead of six, never exceeding *four* that we have heard of. The importers were Messrs, William Platt & Sons, of Philadelphia, relatives of Mr. Anthony T. Newbold, also of Philadelphia, who exhibited them.

These Tartar sheep are quite a curiosity. They are represented as very hardy and weighing about the average of our common sheep. They were imported from Shanghai in the clipper ship White Squall in the spring of 1852. Dr. Emerson, who procured a pair of them, informs us that the ewe brought forth three lambs last February, all of which were raised, and two more lively lambs last November. The wool is coarse, but adapted well for blankets, carpets, &c., and the mutton has the reputation of being unsurpassed by any other, for fine delicate flavor, fully equal to Southdown. The faces of the Tartar sheep are covered with a short, glossy hair.

Persons wishing further information, may apply to A. T. Newbold, No. 9 West Penn Square, Philadelphia.



IMPORTED DURHAM COW ROSE.

The above is a very correct portrait of the beautiful Durham cow, Rose, owned by Christopher Fallon, Esq., of Philadelphia, and to be seen at his farm in Upper Darby township, Delaware county, Pa. She was imported by Mr. Fallon in August last, together with three other superior Durham animals, Nelly 4 years, Lilly 11 months, and the Bull Turk, 8 months old.

The introduction of these fine cattle is a valuable acquisition to this section of the country, and creditable to the public spirit and enterprise of their owner. Under the efficient management of his able and experienced superintendent, George Drayton, we may expect their progeny to fully sustain the reputation of the breed.

Rose was four years old in August last, is of dappled roan color, with very small horns, and neat head and neck, indicating purity of blood; she had a fine heifer calf last November.

She was selected expressly for Mr. Fallon, from one of the best dairy districts in England, by an experienced judge, and took the first premium of $20, at the late Pennsylvania State exhibition, for the best cow imported within 12 months.

She also took the first premium for the best cow at the Delaware County exhibition in 1854.

Nelly, imported in the same vessel with *Rose*, had a bull calf, last December, which we understand is for sale.

Annual Meeting of the Pennsylvania State Agricultural Society.

The Annual Meeting of the Pennsylvania State Agricultural Society was held on Tuesday, the 16th of January, as required by its constitution, in the Hall of the House of Representatives at Harrisburg. In the absence of the President, Judge Watts, the Hon. John H. Ewing, one of the Vice-Presidents, was called to the chair. The Recording Secretary, R. C. Walker, Esq., read the Report of the Executive Committee, which was unanimously adopted. It is as follows:

To the Members of the Pennsylvania State Agricultural Society:—

The ending of the fourth year in the transactions of the Pennsylvania State Agricultural Society, finds it in a position both creditable to the State and worthy of the cause intended to be benefitted. A great end has been accomplished in a short time, and a period has arrived when your Society can step forth untramelled from the pecuniary embarrassment which has retarded other State Societies, and render material aid in fostering institutions for the benefit of the farmer and promotion of agriculture.

Since the memorable convention of farmers, which established this Society, in 1851, the spirit then infused has continued with unabated fervency, and each succeeding year has outstripped its predecessor in adding to the accumulated benefit, until the year 1855 presents the pleasing spectacle of a Society, although in its infancy, capable of assuming and maintaining a rank with those of longer standing and earlier birth.

The Executive Committee, who transact all the business of the Society, have regularly met during the past year, as required by the constitution, and have disposed of all matters that were brought before them for their action.

At their meeting of the 14th of March, 1854, the following Preamble and Resolutions were offered by James Gowen, Esq., and unanimously adopted:

"The death of Elliott Cresson, Esq., which occurred at Philadelphia on the 20th of February, 1854, in the 58th year of his age, has left a void in the ranks of philanthropy, benevolence and private worth, difficult to be supplied or filled, causing a deep sensation of sorrow and regret that his labors in the broad field of human rights and human progress had not been vouchsafed a longer day, with a slower setting sun, for the further development of his noble efforts, and to mitigate the grief of his bereaved relatives and friends. But they and the whole community have the consolation to reflect that however short his probation, he did not live in vain; and "though dead he yet speaketh" in the memorials he has left for their example and contemplation. In these regrets and in these memorials, this Society is deeply a sympathiser and most gratefully a debtor.

"Resolved, That this Society, at its first meeting since the decease of the lamented Elliott Cresson, offers its tribute of regret for the sudden and unexpected loss it and the community have sustained in the death of an enlightened philanthropist, an upright, benevolent citizen, and a public spirited benefactor.

"Resolved, That the generous bequest of five thousand dollars to this Society, by the will of the late Elliott Cresson, towards the erection and support of an Agricultural College demands our grateful and unfeigned thanks, and commands the sympathy and respect of every farmer throughout the land.

"Resolved, That the Pennsylvania State Agricultural Society will and do hereby accept the bequest made to it by the will of the late Elliott Cresson, Esq., and hereby pledge the Society to the faithful application of the same to the object designated by the will of the deceased.

"Resolved, That these proceedings be published in the daily and weekly papers of Philadelphia and Harrisburg, and that a copy of the same be presented to his venerable lady mother, as a token of the Pennsylvania State Agricultural Society's respect and gratitude to the memory of her noble son, and of deep sympathy in her bereavement."

In accordance with a resolution instructing the Secretary to procure a medal-die, one had been furnished upon which the medals for the late exhibition have been struck. Through the courtesy of James Ross Snowdon, Esq., of the United States Mint at Philadelphia, the medals were there struck off, and the die then placed in safe keeping for the future use of the Society. The artistic execution of the die is pronounced good, and was done by A. C. Morin, No. 86 Walnut street, Philadelphia.

According to a similar resolution of instruction, three hundred copies of the first volume of the transactions of this Society, as authorized to be published by the Legislature, have been procured from A. Boyd Hamilton, State Printer, a part of which still remain in the Library.

The life members of the Society now number seventy-four, while the annual members exceed eight thousand. The amount thus received from life members is comparatively small, but can by another year with a proper effort be increased probably ten fold.

The County Agricultural Societies have increased since our last annual meeting until there is one in almost every county in the State, the reports of which, had they all been communicated to the State Society, would no doubt have furnished desirable statistics from every part of the Commonwealth, which would add greatly to the information already obtained from some of these beneficial auxilliaries.

The Fourth Annual Exhibition was held in the twenty-fourth ward of the City of Philadelphia, on the 26th, 27th, 28th and 29th days of September last. The grounds used for the occasion were those known as the Powelton and Bingham estates, the use of which was gratuitously tendered the Society by the Board of Directors of the Pennsylvania Railroad Company, and were in every way peculiarly adapted to the uses of such an exhibition. The fair was one of unusual attraction, and in amount of numbers in attendance, it exceeded any other exhibition probably ever held in the United States. The entry of articles and animals for exhibition on the books of the Society outnumbers by far the entry of any preceding year, and the whole fair in every department, like the Society itself, attained a greatness far beyond the anticipations of its most sanguine friends.

The premium list, as published for the exhibition, and including plate offered, and the premium list of the Pennsylvania Horticultural Society, which was adopted in addition, amounted to over eight thousand dollars, and the premiums themselves in every class were considerably larger than those of the preceding year. Fifty-four silver medals and one hundred and twenty diplomas were awarded and delivered.

It was expected that the Hon. Wm. M. Meredith, who had been invited for the occasion, would have delivered the customary annual address, but from indisposition he was unable to add to the exhibition this attractive feature.

Dr. Bryan, a gentleman of considerable experience in veterinary science, delivered a lecture on the fair ground upon this subject, the manuscript of which has been obtained for the Society.

"The Philadelphia Society for the Promotion of Agriculture," by a resolution of its body, for the purpose of assist-

ing the State Society, and to throw the strength of their organization for the benefit of the State Fair, determined to intermit their annual county exhibition, and appointed a committee of arrangement of their number to assist in making the necessary preparations.

The Pennsylvania Horticultural Society, at Philadelphia, also suspended their annual exhibition, and appointed a committee to superintend the horticultural department of the State Fair. The committees appointed by these two Societies did efficient service in the discharge of the laborious duties, which were incumbent upon them in their respective capacities.

Philadelphia and her citizens did much to promote the interest of the Society during the continuance of the fair, and great credit is due the people who attended the exhibition for their strict observance of temperance and good order. The Mayor and Police of Philadelphia extended the aegis of their municipal authority over all the ramifications of the fair, and protected alike persons and property until the Society had wound up its exhibition, and the last article was removed from the ground.

The closing of the fourth year of the Pennsylvania State Agricultural Society affords the members thereof great cause of congratulation, and promises for the future continued usefulness in the promotion of agriculture and encouragement of the domestic and mechanic arts.

The Treasurer, George H. Bucher, Esq., made his report of the financial concerns of the Society for the past year, which was unanimously adopted. The following is an abstract:

DR.

To balance in hand as per last statement,.....	$6058 64
" life memberships,.....	420 00
" interest on investments,.....	747 12
" receipts at the State Fair, &c.,.....	24 842 31
" restaurants,.....	700 00
" lumber sold,.....	4 593 53
" State appropriation,.....	2 000 00
" contribution to State Fair,.....	2 362 00
" miscellaneous,.....	69 00
	$41 782 60

CR.

By investments per order of Ex. Committee,.....	$11 065 00
" advertising, printing, &c.,.....	1 277 49
" diplomas,.....	400 00
" stamps, postage, &c.,.....	38 58
" three hundred copies of transactions,.....	230 00
" engraving and designs,.....	355 58
" dies,.....	200 00
" medals,.....	252 50
" fair & plowing grounds, hay, straw & lumber,	10 976 33
" watchmen, police, gate keepers, hydrant fixtures,.....	7 059 57
" premiums,.....	4 895 00
" salaries,.....	1 350 00
" miscellaneous,.....	42 07
" balance in the treasury,.....	3 640 48
	$41 782 60
Amount previously invested,.....	$19 000 00
" invested as above,.....	11 065 00
" in the treasury as above,.....	3 640 48
Total means of the Society,.....	$33 705 48

The Committee on Field Crops for the year 1854 made the following report, which was also unanimously adopted, as was also a resolution thanking the author for the clear and comprehensive manner in which it was drawn:

To the Executive Committee of the Pennsylvania State Agricultural Society:

The Committee on Field Crops, organized by the appointment of John P. Rutherford, of Dauphin county, and John H. Ewing, of Washington county, to fill the vacancies occasioned by the absence of Thos. B. Bryson, of Cumberland county, and Jonathan Payson, of Chester county, respectfully report:

That owing to the very severe drought of the last summer, which affected injuriously every product of the farm, there has been no competition for the premiums on any of the field crops, except corn. George Drayton, farmer to Christopher Fallon, of Delaware county, and William Dripps, of Chester county, being the only applicants for the premiums on corn, John Ruthrauff, of Franklin county, the only applicant for the premiums on barley, and there being no applicants for any of the numerous other productions for which premiums were offered.

From the certificates and statement furnished by Mr. Drayton, farmer to Mr. Fallon, which are herewith presented and made part of this report, it appears that he produced from five acres of ground in one contiguous piece, accurately measured by a surveyor with chain and compass, five hundred and eight and one-fourth bushels of shelled corn, being one hundred and one bushels and twenty-seven quarts per acre, as ascertained by actual measurement of the whole in a sealed half bushel between the 18th and 28th days of December last—all of which is certified to by the surveyor and two disinterested witnesses. The Committee take pleasure, therefore, in awarding George Drayton, farmer to Christopher Fallon, the premium of fifty dollars for the best five acres of corn, as taking into view the great drought they consider that product highly commendable to the producer. Mr. Drayton, farmer to Mr. Fallon, also furnished more than half a bushel of shelled corn, besides a quantity in the ear, as a sample of his crop, together with a full statement of the mode of cultivation, thus complying literally with every requisition of the Society.

They also award to William Dripps, of Chester county, the premium of twenty dollars for the second best five acres of corn—Mr. Dripps having produced on five acres and twenty-one perches of land four hundred and nineteen and one-fourth bushels of shelled corn, being eighty-one bushels and twenty-one quarts per acre, as appears by the accompanying statement and certificates, which are also herewith presented and made part of this report.

By the statement and certificates furnished by Mr. Ruthrauff, which are also herewith presented and made part of this report, he appears to have produced on five and one-fourth acres of ground two hundred and sixty-four and one-fourth bushels of barley, being fifty and one-third bushels per acre, and on two acres and sixty-four perches one hundred and thirty-nine and one-half bushels, being fifty-eight and one eighth bushels per acre. The product of the larger as well as the smaller lot, is highly creditable to Mr. Ruthrauff, and we therefore award him a premium of twenty-five dollars for the best five acres of barley. Mr. Ruthrauff presented a few quarts, but not the required quantity of the barley as a sample, which prevented the Committee from testing its weight.

Your Committee have noticed with pleasure the enlargement of the premiums offered for field crops, as well as the requisition from applicants of stricter evidence than in former exhibitions of the measurement both of the ground and product. The award of premiums for an amount of produce per acre, which the great majority of the farming community believe (erroneously, if you please,) could not have been

grown, keeps back competition, and tends to bring discredit upon the Society. It is due, therefore, to the interests of the Society, if not more to this incredulity itself, that the evidence upon which premiums for extraordinary productions are awarded should be such as to satisfy, at least, the honest, intelligent, practical agriculturist. Would it be too much, therefore, to require the several certificates of the surveyor, the applicant and his assistants, not only to be full and explicit, but to be verified by affidavit? We are not aware of any objection to the substitution of affidavits for the certificates, that would not apply with equal force to the requisition of the affidavit in any case whatever, nor can we believe that the honest applicant for a premium would make any objection to the substitution of the one for the other. Certain it is that if the solemnity of the affidavit induces caution, prevents evasion and gives additional credulity to the statements, it will answer a most beneficial purpose.

To insure accuracy and relieve the applicant from unnecessary embarrassments, your Committee would most respectfully suggest the propriety of more specific requisitions and instructions in reference to the statement of the nature, depth and quality of the soil, the crop which for years was produced, the kind, quality and quantity of the manure used, the mode of cultivation, the kind of seed and the manner of sowing it, together with the publication of the forms of certificates or affidavits for the surveyor, applicant and assistants. All of which is most respectfully submitted.

H. N. McALLISTER,
J. P. RUTHERFORD,
J. H. EWING.

The election of officers for the next year being in order, the chair stated that Judge Watts, the able and accomplished president of the Society from its organization in a letter addressed to the Secretary, R. C. Walker, Esq., preemptorily declined a re-election, and desired him to make this determination known at the annual meeting. The following is the letter.

CARLISLE, JAN. 15th, 1855.

ROBERT C. WALKER, Esq. SECRETARY.—DEAR SIR:—I have always said to you that it was my purpose to decline a re-election to the office of President of the State Agricultural Society. I desire that you will make this determination formally known at the annual meeting. I must not be understood to mean that I intend to abate, in any degree, the interest I take in the useful purpose which our Society is destined to mark out; on the contrary, I will always be ready, in any subordinate position, to contribute all my ability to an enterprise, which I estimate, in point of public economy, above all others.

It has always been a subject of regret to me that our annual meetings should necessarily be held at a period when professional duty commands my attention elsewhere. It would afford me great satisfaction to meet farmers from all parts of the State, and aid them to devise plans and means to promote their interest; I should especially be pleased to have an opportunity to urge upon them the assertion of their right to the establishment of a school, where their sons may be taught the science, as well as the practical operations of agriculture at a cost, commensurate with the profits of their business. But this opportunity is denied me, and I can only add the expression of a well matured opinion, that without that appropriate education which is sought and deemed essential to professional success, the progress and profits of agriculture, must be slow—very slow. I have the honor to be, very respectfully, your obedient,

FREDERICK WATTS.

Dr. A. L. Kennedy, A. M. Spangler and David Landreth were appointed a committee to prepare a resolution expressive of the sense of the Society, on the declination of the Hon. Frederick Watts being a candidate for re-election to the Presidency of the Society, who after a few minutes reported the following resolution:

Resolved, That the thanks of the Society be and they are hereby tendered to the Hon. Frederick Watts, of Cumberland county, for the able, courteous and efficient manner in which from the organization of the Society to the present, he has performed the duties of President.

The meeting proceeded to an election, which resulted in the choice of the following gentlemen:

PRESIDENT—James Gowen.

VICE PRESIDENTS—Isaac B. Baxter, A. T. Newbold, Wm. C. Rudman, Algernon S. Roberts, Thos P. Knox, Abraham R. M'Ilvaine, William Stavely, Henry P. Robinson, John Strohm, John P. Rutherford, Amos Kapp, George W. Woodward, Augustus Lukenbaugh, William Jessup, H. N. M'Allister, Jacob S. Haldeman, William Hiester, John S. Isett, John M'Farland, John H. Ewing, John Murdock, William Martin, Sr., William Waugh, William Bigler, James Miles.

ADDITIONAL MEMBERS OF THE EXECUTIVE COMMITTEE—Frederick Watts, John S. Evans, A. O. Hiester, Isaac G. M'Kinley, Simon Cameron.

CORRESPONDING SECRETARY—A. L. Elwyn.

CHEMIST AND GEOLOGIST—S. S. Haldeman.

LIBRARIAN—David Mumma.

The chair presented to the meeting the following letter, received by the Executive Committee from the Hon. James Miles, which was ordered to be published, and also referred to the corporators of the Farmers' High School:

HARRISBURG, JAN 16th, 1855.

To the Executive Committee of the Penn. State Agricultural Society.—Gentlemen:—Believing the Agricultural interests of our state may be eminently promoted by the early establishment of the Farmers High School, where a thorough practical and scientific education may be acquired by the youth of our state, who desire to make the tillage of the soil the business of their lives, I beg to make known to you, and through you to the gentlemen, who are, or may be appointed trustees of the Farmers' High School of Pennsylvania, that I will give to the Institution, two hundred acres of land, situated in Girard township, Erie county, provided said school be located on said land. Yours truly,

JAMES MILES.

David Mumma offered the following preamble and resolution, which were adopted:

Whereas, it is generally believed that a large portion of the several kinds of guano, now sold in our market, are, many of them, of a very inferior quality, and some of them almost worthless, and the frequent impositions practiced upon our farmers, in consequence of the great difficulty in discriminating between a good and an inferior article, has much lessened, if not entirely destroyed, the confidence in this highly valuable manure. Therefore;

Resolved, That we recommend, and respectfully urge, upon the present Legislature the propriety of passing a law providing for the appointment of an Inspector of Guano for this State.

On motion of A. M. Spangler, it was

Resolved, That there be appointed by the chair, a committee consisting of five members, to attend the annual meeting of the United States Agricultural Society for 1855.

On motion of Isaac G. McKinley, it was

Resolved, That the Pennsylvania State Agricultural Society takes a deep interest in the establishment of an institution for the instruction of the sons of the farmers of Pennsylvania in the most approved practical and scientific mode

of cultivating the soil; and inasmuch as the "act to incorporate the Farmers' High School of Pennsylvania," passed at the last session of the Legislature was, unfortunately, so defective as to prevent an organization under it, the present Legislature is earnestly invoked to modify said act in such manner as to secure the establishment of this most invaluable institution at the earliest practicable period.

On motion of Mr. Stavely, it was resolved that when the meeting adjourns it adjourns to meet at half past seven o'clock this evening.

Previous to the adjournment, Mr. Ewing, observing the President in the Hall, signified a wish to vacate the Chair, and after a few forcible and eloquent remarks gave place to Mr. Gowen, who upon taking the chair spoke as follows:

GENTLEMEN:—I return you my sincere thanks for the honor you have done me in electing me President of this Society for the current year. With the profound sense of the obligation conferred, I must also acknowledge the apprehensions I feel that the time I can devote, as well as the ability I possess, will be inadequate to the proper discharge of the duties of the office to which you have elected me. But one thing I can promise, in all confidence, and that is, that whatever I can do to promote the interests of the Society shall be done zealously and faithfully. It becomes me likewise to say that I consider it an honor to have been chosen to fill the place vacated by my predecessor, the Hon. Frederick Watts, who so ably presided over the Society since its organization.

A resolution of thanks was tendered to the Hon. John H. Ewing, for the able manner in which he had presided at the meeting.

Adjourned till half past seven o'clock.

EVENING SESSION.

A. L. Kennedy offered the following amendment to the fourth section of the constitution, which was not agreed to. Strike out last clause and insert:

"At the time and place of the annual exhibition, there shall be held, under the auspices of this Society, a Convention of Delegates appointed for the purpose by the County Agricultural Societies, which convention shall elect its own officers, and be, in all respects, auxilliary to this Society."

On motion of William Stavely, the first section of the constitution was amended so as to read:

"The Society shall consist of all such persons as shall pay to the Treasurer not less than one dollar, and annually thereafter not less than one dollar; the names of the members to be recorded by the Secretary."

On motion, it was resolved that the thanks of this Society be tendered to the members of the House of Representatives for the use of their Hall.

On motion the Society adjourned.

Classification of Manures.

BY JOHN P. NORTON.

OF ANIMAL MANURES.—We will now take up the second class, the animal manures. These comprise the blood, flesh, hair, horns, bones and excrements of animals. Manures of this class are more powerful by far than the vegetable manures, because they contain so much more nitrogen. I now simply state this fact; the reason why nitrogen is so efficacious will be given in a subsequent chapter. Blood and flesh are among the most valuable of all; wherever they can be obtained, they should be secured at once, and either buried or made into compost. All of the offal from slaughter houses is of much value. Though in this country it is often entirely wasted.

It is not uncommon, in many districts, to see horses or cattle that die from disease drawn out to some secluded spot, and there left to decay on the surface. These are known to be some of the most powerful manures that the farmer could obtain; equal to guano, poudrette, or any other more costly fertilizers. Every animal that dies should be made into compost, or buried in pieces at once. The best plan is to separate the flesh, which decomposes readily and produces an immediate effect, and make use of the bones according to some of the methods to be hereafter described.

The hair of animals is an exceedingly rich material; for this reason woollen rags, and the waste from woollen mills, are both considered valuable in England; they are sold there at from $20 to $40 per ton, and are eagerly sought after at these prices, as not only very fertilizing, but also very lasting in the soil. All of the hair obtained from the furs of animals is there scrupulously saved, and sold at a high price. Twenty or thirty bushels per acre produce an excellent effect.

All these parts of the animal leave an ash corresponding with that of plants in the substances which it contains, with the single exception of silica; this does not seem to enter into the composition of the animal. We are then now able to point out distinctions between the inorganic matter in the soil, in the plant, and in the animal. They all contain the same substances, if we omit silica and alumina.

OF BONES.—There is one important part of the animal yet unnoticed, that is, the bones. Their composition is, when dry, *earthy* matter about 60 lbs. in 100 lbs., and *organic* matter, that burns away, about 34 lbs.

The earthy matter consists for the most part of phosphate of lime, that is, lime in combination with phosphoric acid; these, as already shown, are two most valuable substances for application to any soil.

The organic part is called *gelatin*, or glue; this is boiled out by the glue-makers; it is extremely rich in *nitrogen*, and is therefore an excellent manure. We thus see at once how important a source of nourishment for our land is to be found in bones. They unite from the above statement, some of the most efficacious and desirable organic and inorganic manures. Both of these parts are fitted to minister powerfully to the growth of the plant.

When the bones are applied whole, the effect is not very marked at first, because they decay slowly in the soil; it is also necessary to put on a large quantity per acre. The best way is to have them crushed to powder, or to fine fragments in mills. Ten bushels of dust will produce a more immediate and abundant result than 80 or 100 bushels of whole bones, although of course the effect will be sooner over. An advantageous way of using them is to put on 8 or 10 bushels of dust per acre, and half the usual quantity of farm-yard manure.

Boiled bones that have been used by the glue-makers are still quite valuable; they have lost the greater part of their gelatine, but the phosphates remain, and the bones are so softened by the long boiling that they have undergone, as to decompose quickly, and afford an immediate supply of food to plants.

Another most important form of applying bones is in a state of solution by sulphuric acid (oil of vitriol). This is a cheap substance, costing by the carboy not more than 2½ to 3 cents per lb. To every 100 lbs. of bones, about 50 or 60 of acid are taken; if bone dust is used 25 to 45 lbs. of acid are sufficient. The acid must be mixed with two or three times its bulk of water, because if applied strong it would only burn and blacken the bones without dissolving them.

The bones are placed in a tub, and a portion of the previously diluted acid poured upon them. After standing a day, another portion of acid may be poured on; and finally

the last on the third day, if they are not already dissolved. The mass should be often stirred.

Another good way is to place the bones in a heap upon any convenient floor, and pour a portion of the acid upon them. After standing half a day, the heap should be thoroughly mixed, and a little more acid added; this to be continued as long as necessary. It is a method which I have known to prove very successful.

In either case the bones will ultimately soften and dissolve to a kind of paste; this may be mixed with twenty or thirty times its bulk of water, and applied by means of an ordinary water cart; used in this way, it produces a wonderful effect upon nearly all crops.

A more convenient method in most cases is to thoroughly mix the pasty mass of dissolved bones with a large quantity of ashes, peat earth, saw-dust, or charcoal dust. It can then be sown by hand, or dropped from a drilling machine. Two or three bushels of these dissolved bones, with half the quantity of yard manure, are sufficient for an acre. This is, therefore, an exceedingly powerful fertilizer. One reason for its remarkable effect is, that the bones are, by dissolving, brought into a state of such minute division that they are at once available for the plant. A peculiar phosphate of lime is formed, called by chemists a *superphosphate*, which is very soluble; and in addition to this, we have the sulphuric acid, of itself an excellent application to most soils.

Bones are useful in nearly every district, and are peculiarly adapted to all, or at least to most of those situations where the land, without heavy manuring, no longer bears good wheat, or Indian corn, or other grains. In a great majority of cases where the land is run down by grain cropping, the use of bones, in some of the forms above mentioned, is of all things the most likely to meet the deficiency. It will be remembered that the ash of grain is peculiarly rich in phosphates; consequently, as grain is generally sold off, the phosphates are most readily exhausted; in bones, therefore, we find just the manure for restoring them, and with little expense. This has been already tried in some parts of the country, and with most encouraging success. I would particularly recommend farmers to experiment with bones dissolved in sulphuric acid. The dissolving them is a simple business. The cheapness of this manure is a great recommendation. Two bushels of bones would not certainly cost more than $1,* then say 50 lbs. of acid to dissolve them, would cost by the carboy $1.50, making only $2.50 for a quantity quite sufficient for an acre, with half the usual dressing of farm-yard manure. It would be worth almost as much as this to cart the common manure from the yard, to say nothing of its value. There are few farms on which bones enough might not be collected in the course of a year to help out in this way the manuring of several acres.

Bones may not only be applied to the ordinary cultivated crops, but also to meadows and pastures. In some of the older dairy districts, a few bushels of bone dust per acre will at once restore worn out pastures. The reason is, that the milk and cheese which are in one form or another sold and carried away, contain considerable quantities of phosphates in their ash. These are restored to the land by bones. It is calculated by Professor Johnson that a cow giving 20 quarts of milk per day, takes from the soil about 2 lbs. of phosphate of lime or bone earth in each week. There would thus be required three or four pounds of bones to make good this loss. If it is not made good in some way, the rich grasses after a time cease to flourish; being succeeded by those which require less phosphate of lime, and therefore do not furnish when eaten by the cow so rich or so abundant milk.

* The present price here is $1 20.

All of these uses of bones which have been described are understood and appreciated in England; so much so, that the bones are all collected with the most scrupulous care, and are even imported from every other country where they can be advantageously obtained. It is to be hoped that the great waste of them in this country will soon cease, and that they will be eagerly sought after by American farmers.

Reported for the Farm Journal.

Meeting of the Philadelphia Society for Promoting Agriculture.

Philadelphia Society for Promoting Agriculture, stated meeting at the Society rooms, Masonic Hall, South Third Street, on Monday morning, January 3rd, 1855.

President, Dr. Alfred L. Elwyn, in the chair.

The minutes of the proceeding meeting were read and approved. The following gentleman proposed at the previous meeting were elected resident members:—Thomas Drake, Edgar Black, William G. Warder and Henry Grambo, of Philadelphia, and James Sloan, of Montgomery county. Mr. Davis S. Brown presented to the Society for distribution a number of copies in pamphlet form of the letter of Mr. Davis M. Stone, of the New York Journal of Commerce, to the Wool-growers; also copies of the New York Evening Post containing an article on the same subject.

Mr. Brown accompanies the donation with an interesting account of the manufacture of woollens in the United States; in the course of which he states that the discriminating duty on wool, which had been designed to benefit the manufacturers has actually proved so injurious that the mills for finer labors were nearly all closed. He referred especially to the manufacture of broadcloths. In such goods the warp was formed of American wool, for which purpose such wool was eminently adapted; but for the woof, filling and face of fine cloths, foreign wool was found indispensable. This wool the present tariff almost excluded from our market, and one by one, the broadcloth mills had stopped until the last, that of Mr. Slater, of Rhode Island, (whose father was one of the first to introduce the making of broadcloths into this country) had ceased its operations. Mr. Brown did not vouch for the correctness of the view entertained by workmen, but he knew that they asserted the superiority of Saxon wool for the above purposes, to the fact that in Germany they sheared their sheep twice a year. Certainly, German cloths at the present rate of duty were fast driving all others out of the market. A removal of the duty on wool altogether, would probably open the way for the unprecedented increase in the manufacture of American broad cloths. No better state of the trade was possible than that of freedom from all duty. This was true both of wool and dye-stuffs; if we admit them free the price of wool in all other markets would at once be raised; for certain fabrics, our wool was in demand; it was more flexible, longer, and a larger quantity of it was finer than the European and Australian wool. Great Britian has freely opened the raw materials of the world to her manufacturers. In the United States where money-rates and labor are higher we cannot expect success unless we imitate her. Our wool for the making of flannels and fancy cashmeres was equal to any other. South American wool was well adapted to the manufacture of blankets, but for other purposes it required to be mixed with that of our country. The French manufacturers found our wool more flexible and abundantly suited to making Merinos and worsted goods.

MR. SPANGLER reminded the members that the wool which had taken the first premium at the World's Fair, London, was from Tennessee.

Mr. C. W. HARRISON believed that much of the alleged

inferiority of American wool arose from our merchants failing to discriminate qualities in the purchase. They pay too much for the whole fleece without sorting.

Mr. Aaron Clement presented the following communication on the "Tartar Sheep":—The Tartar or Shanghai Sheep lately introduced into this country exhibited some very peculiar characteristics. They are of fine size with broad tails, prominent noses, drooping ears and very agreeable countenances. The fleece is light and only suited for blanketings and other coarse woollen fabrics. The mutton is highly esteemed, being free from all rank or woolly flavor. Perhaps the most distinguished characteristic of the Tartar sheep is their numerous offspring, the ewes having lambs every spring and fall, and from two to four at a time. Dr. Emerson, of Philadelphia, who obtained a pair of the original stock, states that one of his ewes had three lambs last February, all of which have been raised; about the middle of November she had two more, whilst at the same time, two of her February lambs had each a lamb, making her a grandmother within nine months, and her progeny within that time no less than seven. The Doctor crossed the Shanghai stock with an excellent breed of the country, by which the carcase has been increased, and the fleece much improved. Probably this will be moderated to a point which may render them more acceptable to many, than the full bloods. I have a buck and ewe of these half bloods, now with me, which are certainly very fine stock, and well worth the attention of all persons who take an interest in sheep, especially those who look to profit more from the lambs and mutton than from the fleece."

Dr. Emerson requested Mr. Newbold to relate his experience with the Tartar sheep.

Mr. Newbold had two ewes seven months old, one of which has had two and the other three lambs. The old ewe has had seven lambs within twelve months; the usual number at a birth was three, but his friend Dr. Emerson had a ewe which died from an injury received a few days before her "term", in which in dissection four fetus were fonnd. The wool was not fine, it would neither full nor felt and was unshrinkable.

Mr. O. Sheridan doubted if any ewe could furnish milk enough to support two or three lambs. His South-Downs certainly could not. Dr. Emerson remarked that the capacity to furnish milk has been proven by his ewes, two of which had raised their lambs without any assistance.

Mr. Sheridan moved "that the Executive committee be requested to report at next meeting on the expediency of the Society having an exhibition next autumn," which motion was postponed until after the election of officers.

On motion that the annual election be now held, which was so resolved; and Messrs. H. Ingersoll and W. Harrison were appointed Tellers

Dr. Elwyn stated that having served the Society as President for two terms, he was according to XIX By-laws, although nominated for re-election, no longer eligible; he must therefore decline being a candidate.

The election being held resulted as follows:—*President*, D. Landreth; *Vice President*, A. T. Newbold and Aaron Clement; *Corresponding Secretary*, S. G. Fisher; *Recording Secretary*, Alfred L. Kennedy; *Assistant Secretary*, P. R. Freas; *Executive Committee*, Dennis Kelly, A. S. Roberts, A. T. Newbold, Saml. Williams, John Lardner and John McGowan.

Dr. Kennedy offered the following Resolution which was unanimously adopted. Resolved, that the thanks of the Society be, and they are hereby tended to Dr. A. L. Elwyn for the courteous and impartial manner in which he has performed the duties of President during the last two years. Dr. Elwyn reminded the Society that they had frequently, during the past ten years, entertained the proposition to establish an Agricultural Reading Room, to be opened on Tuesday and Friday evening and through the day. He deemed the present an eligible time to carry out the plan, inasmuch as the Society would ere long be compelled to find new accommodations.

Mr. Spangler approved highly of the views expressed by the last speaker.

Dr. Eewyn announced that the next session of the State Society would be held at Harrisburg on the 16th inst.

The *Chair* deemed the occasion of that meeting a proper one on which to represent to the Legislature the great wrong done to the Society and the cause of Agriculture, in this section of the State, by the withdrawal of our annual appropriation, which had been continued uninterruptedly for so many years. On motion of Mr. Spangler, those of our members who attend the session of the State Society were appointed a committee to present our claims to the Legislature. On motion adjourned.

Price of Land.

J. L. Darlington, Esq:—In compliance with a paragraph of an editorial in the last number of your valuable Journal, headed, "Price of Land," I will give you a short sketch of the prices of land and produce, as well as the market facilities of Schuylkill County. Farms distant from four to ten and twelve miles from the great Coal Region, of this great Coal county, are really more valuable, than is generally supposed, by persons who live out of it, or have not visted the county, except by a hasty flight on the numerous Railroads that connect like a network, giving life and bustle wherever they lead, which are mostly located where very little farming is done. Nor can a person form a correct idea of the extent of the Agricultural portions of the county, unless he leaves the railroad at Orwigsburg, at least, and travel through the valleys, leading from the eastern parts of the county, in a south-west course, beyond Pine-Grove. Farms susceptible of being made profitable, by a judicious course of farming and improvement, in the valleys south of the Sharp Mountain, now but poorly managed, for want of better farmers, can be bought from twenty to fifty dollars per acre; others, under better management, owned or cultivated by the best farmers in the county, will bring from fifty to seventy-five, and some as high as one hundred dollars per acre, much depending on the quality of the soil and location. The advantages of a near and good market, in the numerous towns in the Coal Region, for every thing the farmer can produce, are incalculable. A load of hay can be packed in the morning, taken to Pottsville, or any other place in the region, you choose, sold from twenty to twenty-five, and even as high as thirty dollars a ton, when you can return with a load of manure, in time to take supper with the family circle. Every thing readily sells at proportionably high prices. We have farmers among us coming from near Philadelphia, who say that the truck and dairy business pays them better prices at Pottsville, than at Philadelphia, which is evident from the fact, that thousands of dollars worth of vegetables, and small fruit, are annually bought in Philadelphia, and sent by the Reading Railroad to Pottsville, and in fact to all parts of the densely inhabited Coal Region, to supply the wants of the thousands of operatives and other classes The same holds true to all the coarser produce, such as hay, grain, flour, potatoes, &c. Melons, peaches, pears, apples and other fruit suitable to the climate, can be produced here, of as good quality as in any part of Pennsylvania; which fact I can vouch for, from my own experience. I should be happy to welcome some of

the Philadelphia, Chester, Delaware and Bucks county farmers among us. Any one wishing to locate himself on a Schuykill county farm, will find me ready to give him such assistance and directions, as may be in my power. It is the cultivation of harmony and friendship among men, that makes human life worth possessing. J. S. KELLER.

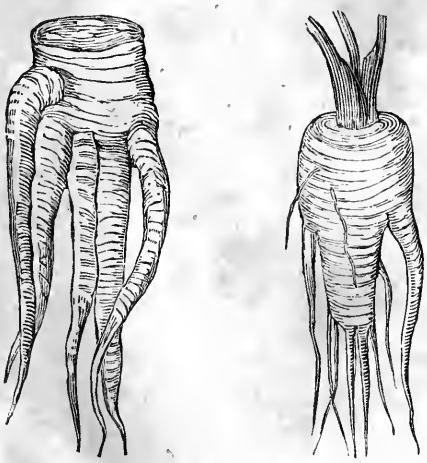
Orwigsburg, Jan., 15th, 1855.

Finger and Toe in Root Crops.

BY JAMES BUCKMAN, F.G.S., F.L.S.

The so-called disease of finger and toe in root crops is a subject which has for a long time occupied the attention of those connected with agriculture, but apparently without at all settling the questions as to its nature and origin, as we find that up to the present time one section of practical men hold the opinion that the malformation of the root, which has given rise to the designation, is caused by uneven manuring; another, that it is due to the presence of stones, or a want of due pulverisation of the soil; whilst a third attributes the whole matter to attacks of insects.

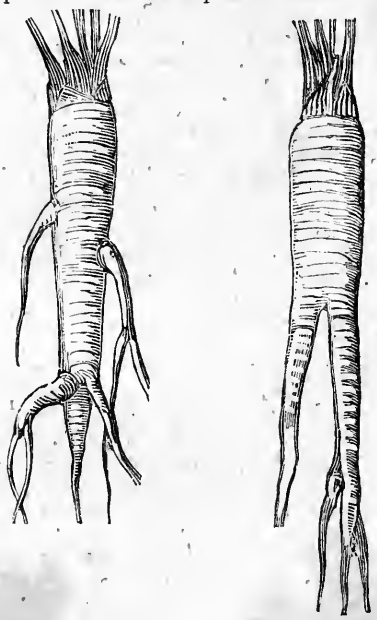
Now, this discrepancy of opinion results from a variety of causes, the most prominent of which is a want of agreement as to the nature of the matter under investigation, inasmuch as we find that it is not restricted to a designation of that peculiar branching or growing of the roots in a digitate form, from which the term finger and toe is derived; but the excrescences caused by the bulging out of the root around the larvæ of insects, cracking and splitting of the root, and bletting or rotting of its parts are all somehow or another included in the category of finger and toe; and though it is possible that most of these may be found to operate under some of the circumstances by which the peculiarity of growth it is my present object to describe is produced, yet the following remarks are meant to apply only to an explanation of the facts connected with the branching or forked method of growth of some roots, as Parsnips, Carots, and Turnips (see accompanying drawings 1 and



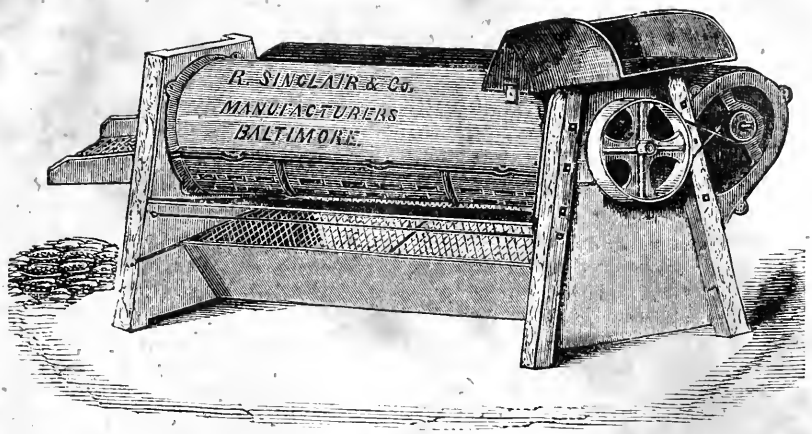
2), as distinguished from the smooth outline and unbranched condition which mark well developed root crops.

As my conclusions upon this subject have been arrived at in experimenting upon the growth of cultivated roots from wild kinds, I shall, in illustrating the subject, describe—1st, Some experiments on the growth of wild roots, and the conclusions I have been led to in consequence of my observations upon these. 2d, I shall attempt to show that the history of root crops confirms the view of "finger and toe," to which such experiments have led.

1st. EXPERIMENTS WITH WILD ROOTS, &c.—In the spring of 1848 I planted two of my experimental plots with seeds of the Pastinaca sativa (Parsnip), and Daucus carrota (Carrot), both of which grew spontaneously in the garden precints; the seeds were gathered in the previous summer from wild plants. On being sown, both species came up well; but as they advanced, many of the specimens showed a disposition to run to seed the



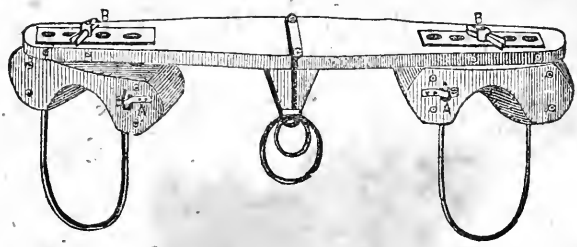
first year; and as seed from these would have been of no use in my after experiments, which were designed to enable me to note the effect of cultivation upon wild specimens, the plants in which the running disposition showed itself were hoed out. An examination of the crop in the autumn showed, in the Parsnip more particularly, some interesting results, the most prominent of which were, that whilst most of the specimens presented the dark green hairy leaves peculiar to the wild plant, there were a few examples in which the foliage had assumed the light green and smooth aspect, devoid of hairs, which characterises the cultivated plant; and amongst the latter there were a few with larger leaves and broader divisions or leaf-lobes than the rest, the leaves, too, all growing symmetrically around one central bud, whilst others showed a disposition to throw up more buds than one. Here, then, it was evident that the examples with the single central bud were best calculated to carry on the experiments, and consequently the remainder were rooted out, when it was observed that the roots were for the most part more fleshy than those of quite wild examples; and while they were as much forked as wild roots (see drawing 3), the increased fleshiness extended to the forks equally with the larger part.



READING'S PATENT HORSE POWER CORN SHELLER AND CLEANER.

Robert Sinclair, Jr. & Co. of Baltimore, have purchased the right to make and sell Reading's celebrated Corn Sheller and Cleaner, as represented by the figure which is admirably adapted for large corn planters, and the best Horse Power Machine known. It is estimated to shell, cob, and clean, in perfect order, 1,500 to 2,000 bushels of Corn per day.

The works are remarkably simple, the machine being made without springs, or cog gearing, and in every respect a machine particularly desirable for shelling large crops. Price including FAN ATTACHMENT, as represented by the Figure, - - - $60 00
Same Machine without the Fan, (see Figure in last Number.) - - - 45 00



VOSE'S OX YOKE, PATENTED AUGUST 10TH, 1853.

"*Muzzle not the Ox that treadeth out the Corn.*"

In all history, the ox is associated with man as his faithful servant. The horse has been rather man's companion; and, therefore, caressed and apostrophised. And when it has been found necessary to take him from the chariot to the wagon, every care has been taken, both in an anatomical and mechanical point of view, to have his harness constructed soft and flexile and on the best principles. None, or but little of this care has been taken in connexion with the ox. It is true he has been worshipped as a God, and sacrificed to the gods, but he has never been caressed—has never, when he has been whipped and cudgelled, had any of those good natured apologies made to him that, after ill treatment, are usually made to a horse. If his harness, by its malformation and rudeness, pained and lacerated his flesh, it made no matter—he was only an ox. And yet in man's sober moments—perhaps we should say in h s lazy moments, when he had nothing to do but pity—this consideration and treatment of this truly useful animal, has been mourned over and condemned. It now must give to all men real pleasure to see what this pity gives us, as in this last view of the case, we know it has at last mercifully worked itself into form—into real practical alleviation. It is but a few years since a yoke was invented, by which the oxen can walk closer or more apart as the inequalities or other circumstances of the ground, may make it desirable. And now, we have another and more important improvement in this second new yoke, of which the above is a cut. If the first, or sliding yoke, is a convenience to the oxen, this yoke embraces a principle of mercy as well as of mechanical improvement, as in it the oxen's shoulders cannot possibly be chafed or mangled, as they too frequently are in the old or common yoke.

In this yoke the neck blocks are separate from the beam, and attached to it by strong bolts passing from an iron thimble or socket in the block up through the centre of the beam, as represented at the letter B. This iron thimble or socket, is an improvement upon which

application for a patent is now being made by Mr. Dedrick. This yoke has five decided advantages over all others: *First.* By the neck block accommodating itself to whatever movement of the ox, it is impossible for his shoulders ever to become sore or broken. *Second.* It does away with the evil arising from one ox stepping in advance of the other; as, by the moving of the blocks, the weight must under all possible circumstances fall equally on both oxen—except, (which is the *Third* advantage,) when desiring to favor one you may move him one or more holes farther from the centre than his fellow. *Fourth.* By moving the neck blocks into either of the five holes, (represented by dots in the beam below,) it can be changed at pleasure into a yoke of any width required for ploughing, carting, sleighing or hauling; which advantage of itself makes its value equal to two or three of the common yoke. *Fifth.* Bows in this yoke will last much longer than in any other, because the tugging or jerking of the ox does not fall on the bow, but directly on the centre bolt. The bows are secured by keys passing through the bows and neck blocks represented at A. A.—there being in each block two or more holes, so that the bow can be raised or lowered at pleasure.

These yokes are manufactured by Deering & Dickson, of the premium works at Albany; and we believe are for sale by Paschall Morris & Co., of this city. We believe its price (patent right included,) is seven dollars; and we feel that we should not conclude this article without saying, that when the great ease and advantage it gives to the oxen is considered, no intelligent or humane farmer should allow the two or three dollars difference in price between it and the ordinary yoke, to make him hesitate a moment in its purchase.

Curculio Remedy.

The appointed several Horticultural Societies, to test the merit of the alleged discovery by Mr. Mathews, of Ohio, of an effectual remedy against the curculio, have reported their *success* the past season, but wish to give it full trial another season also, before pronouncing a final opinion. No intimation is given of the nature of the remedy, but so far as tried, there is some reason to hope this hitherto insuperable obstacle to the successful culture of a most delightful fruit may be obviated.

The trial of another year will be looked for with the greatest interest.

Farmers' Creed.

I believe in small farms and thorough cultivation.

I believe that the soil loves to eat, as well as its owner, and ought, therefore, to be manured.

I believe in large crops, which leaves the land better than they found it, making both the farmer and the farm rich at once.

I believe in going to the bottom of things, and, therefore, in deep plowing, and enough of it, all the better if with a subsoil plow.

I believe that every farmer should own a good farm.

I believe that the best fertilizer of any soil is a spirit of industry, enterprise and intelligence. Without this, lime and gypsum, bones and green manure, marl and guano, will be of little use.

I believe in good fences, good barns, good farm houses, good stock, good orchards, and children enough to gather the fruit.

I believe in a clean kitchen, a neat wife in it, a spinning piano, a clean cupboard, a clean dairy and a clear conscience.

I disbelieve in farmers that will not improve their farms, that grow poorer every year, starving cattle, farmers' boys turned into clerks and merchants, and farmers' daughters unwilling to work; and in all farmers that are ashamed of their vocation, or who drink whiskey till all honest men are ashamed of them.

I will also add—I believe in supporting our County and State Agricultural Societies.

I believe in having a well filled agricultural library.

I believe in supporting the agricultural papers of our State, paying for them, reading them, and circulating them among my neighbors.—*Ohio Cultivator.*

Smithfield Club Cattle Show.

We have full reports of this justly celebrated exhibition of fat cattle, sheep, pigs, &c., but our space this week forbids an extended notice. The Gold Medal for the best steer or ox of any breed or class was awarded to the Duke of Rutland, for a Short-horn, 4 years and 4 months old. He was "probably never excelled for quality; very fat but evenly so; extraordinary thick in the twist and rump, and very fully covered on all the most valuable parts. The Gold Medal for the best heifer or cow of any breed was given to a Short-horn cow, 6 years and 8 months old, belonging to CHARLES TOWNLEY, of Burnley. The Short-Horns have now for three years in succession carried off these prizes. The Gold Medal for the best pen of long wooled sheep of any breed or class was awarded to three pure bred Leicester wethers, 21 months old, bred and fed by the Marquis of Exeter. The Gold Medal for the best pen of one year old short wooled sheep of any breed or class was awarded to three South Down wethers, bred by the Duke of Richmond. The Gold Medal for the best pen of pigs of any breed or class was awarded to J. V. WILLIAMS, Bridgewater, Somerset, for three improved Leicesters 17 weeks old, color black, with very thin hair.

The special correspondent of the *Mark Lane Express*, says "the classes of Short-horns quite bear the palm at this meeting, and as a whole fully equal, if not surpass, the average of past years." The *Agricultural Gazette* says "the elegant forms of the Devon and the Down, the most beautiful of breeds in cattle and sheep respectively, never appeared either in equal perfection or in such numbers." The first prize Devon ox under three years old was bred by Prince ALBERT, and is said to be a remarkably compact, well got up little thing, polished to the very tips of the horns, which, by the way, are hardly of a Devon charactar. The most elegant and beautiful specimen of an animal in the yard, perhaps, was the first prize Devon heifer, by the Earl of Leicester, somewhat lighter in color, beautifully fine in bone, horn and muzzle." The Hereford class were "hardly up in quality to those of former years." The first prize was awarded to ISAAC NIBLET, of Bristol, for a "well bred, remarkably evenly fattened, ripe ox, very thick in the flesh all over especially on the parts most valuable to the butcher." The second prize was awarded to Prince ALBERT, for a

large compact beast—somewhat coarser than its neighbor, but remarkably thickly covered with useful flesh.

There was a fine show of South Down sheep, a comparatively inferior one of long wools, and a very good display of the crosses between them. SAMUEL DRUCE, of Eynsham, Oxfordshire, "who deserves great credit for his energy and success in enforcing the profitableness of the cross bred Down and long wooled sheep," carried off the prize in the class of cross breeds. The *Mark Lane Express* says: "In the down classes we think great progress is yet making; our taste accords with the production of a great weight of food of good quality, in a given time, either in growth or feeding. We think the Hampshire Downs shown gave decided advantages on this point, being very large and heavy. The pure Downs also gave evidence of improvement. We never saw the Duke of Richmond's Downs show so well; they retain their symmetry under a broader frame of greater substance.

The show of pigs appears to have been rather meagre. The celebrated Coleshill breed, though fairly represented, were not equal to former years, and the fine porkers bred by FISHER HOBBS, and others of the same school, were missing.

Large Beet.

MR. DARLINGTON:—We have just weighed and measured a fine beet, of the blood root variety, which grew in our garden during the past excessively dry season. Length twenty inches, circumference twenty one inches, weight ten pounds and two ounces.

There is deep soil in Crawford county, and *plenty of it.* Thousands of acres to be had yet at $5 per acre and some for less. F. SCHREINER.

Crawford Co., Nov. 1st. 1854.

Domestic Recipes.

TO CLEAN RINGS, BROOCHES, AND OTHER JEWELRY.—Put a little hartshorn into a saucer; dip into a clean, soft rag, from an old cambric handkerchief. With the the rag, go carefully over the jewelry, on both sides. Then dry and polish, with another bit of soft rag; and, finally, with a soft piece of old silk. Precious stones, mosaics and cameos may be cleaned in this manner. To brighten pearls, tear off a small bit of pin-paper, (such as rows of pins are stuck in,) roll it up, and, with the end of the roll, rub each pearl, separately; renewing the paper frequently.

TO REMOVE ACIDS, AND OTHER STAINS FROM SILKS, GLOVES, AND WOOLLENS.—The application of hartshorn, rubbed on with the finger, will generally remove the stain-spots that are sometimes found on new silk, and on new kid gloves. There are few stains, indeed, that may not be obliterated by hartshorn. If too strong, dilute it with a little water. Pour out, into your saucer, but very little hartshorn at a time, as it evaporates almost immediately.

Reddish stains, on black silk, or worsted, can, almost always, be removed by hartshorn; and the original black color will immediately re-appear.

TO KEEP BRITTANIA-METAL BRIGHT.—Dip a clean woollen cloth into the best and cleanest lamp oil, and rub it, hard, all over the outside of your Brittannia-ware. Then wash it well in strong soap-suds, and afterwards polish with finely powdered whiting and a buckskin.

INDIAN HASTY PUDDING.—Put two quarts of milk into a clean pot or sauce-pan. Set it over the fire, adding a level tea-spoonful of salt, and, when it comes to a boil, stir in a lump of fresh butter about the size of a goose-egg. Then add (a handful at a time) sufficient Indian meal to make it very thick, stirring it all the while with a mush-stick. Keep it boiling well, and continue to throw in Indian meal till it is so thick that the stick stands upright in it. Then send it to table hot, and eat it with milk, cream, or molasses and butter.

INDIAN MUFFINS.—A pint and a half of yellow Indian meal, sifted.—A handful of wheat flour.—A quarter of a pound of fresh butter.—A quart of milk.—Four eggs.—A very small tea-spoonful of salt. Put the milk into a sauce-pan. Cut the butter into it. Set it over the fire and warm it until the butter is very soft, but not until it melts. Then take it off, stir it well, till all mixed, and set it away to cool. Beat four eggs very light; and when the milk is cold, stir them into it, alternately with the meal, a little at a time of each. Add the salt. Beat the whole very hard after it is all mixed. Then butter some muffin-rings on the inside. Set them in a hot oven, or on a heated griddle; pour some of the batter into each; and bake the muffins well. Send them hot to table, continuing to bake while a fresh supply is wanted. Pull them open with your fingers, and eat them with butter, to which you may add molasses or honey.

A Good Milking Alderney.

To the Editor of the Farm Journal:—I send you for publication a copy of a letter lately received from Wm. C. Wilson, Esq., of Baltimore, to whom I sold an imported Alderney cow. She was purchased by me of Roswell L. Colt, of Patterson, New Jersey, in March 1851, for Mr. Wilson.

I noticed her at the Maryland State Fair in October last, when Mr. W. informed me that she had given in the summer of 1853, as high as 36 qts. of clear milk in one day. His farmer, who was present, willingly offered to testify to the fact. She then had a bull calf about four months old, which I was induced to purchase on account of the milking properties of the dam.

The Alderneys in general, have not had the character of being great milkers; but in richness and quality their milk exceeds all others. It will be seen by the following letter that some of them are very great milkers also. Respectfully yours,

Philada., Jan. 9th, 1855. AARON CLEMENT.

BALTIMORE, Dec. 19th, 1854.

DEAR SIR:—I enclose Mr. Brooks' deposition in regard to the Alderney cow, "Lady," made before Justice Morrison, one of our most respectable magistrates. On my telling Brooks that you wanted this statement, he expressed the greatest readiness to confirm it, and is well aware of the sacred responsibility of an oath. At one time I thought there might be some mistake in the matter, but on procuring a new stamped measure, I found the old measure precisely the same size, and the

dairy maid and two men on the farm, confirmed the statement. Brooks' wife expressed her willingness to swear also to the fact. You will observe that the yield is one quart less than you supposed. Mrs. B., who has been milking cows for 25 years, says that "Lady" is the best cow she ever milked; that her milk is as rich when she is fresh as at any other time, and she never goes dry. Her first heifer, now three years old, had her first calf in March last, and three or four months after, on good pasture gave 16 qrs. per day. "Lady's" second calf, a heifer, now two years and four months old, a beautiful animal, and has taken three first premiums, our friend Martin Goldsborough offered me a few weeks since $200 for, but I declined. She has since dropped a fine heifer calf, that could not be bought for $100. "Lady's" third, 15 months old, is also very promising.

As you no doubt take an interest in the cattle I procured through you, I may ask you if you recollect a yearling heifer I purchased of you at our Fair in 1851. Mr. Calvert obtained one from you also. Like "Lady," this heifer (Fannie,) was from Mr. Colt's, and descended on or both sides from Biddell Stock. She gave last summer, 27 or 28 qrs. per day, being then about three years and nine months old, and with her third calf; goes dry about four days. The yield, &c., of these two, would seem to confirm a remark Mr. Colt made in my hearing that "the Biddell stock proved better with him, than his own more recent importation.'

The deposition, you will observe, refers to season of 1853. She gave about the same quantity, judging from the pail, this season. I had made arrangements to have all accurately measured, and quality tested, at various periods of their milking, but was compelled by an attack of rheumatism, to be absent at the Virginia Springs, nearly all the summer. Another season I will carry this out, and send you the result.

Yours respectfully, WM. C. WILSON.

STATE OF MARYLAND, CITY OF BALTIMORE, S S: On this, 19th day of December, 1854, before me the subscriber, a Justice of the Peace of the State of Maryland, and for the city aforesaid, personally appeared William Brooks, and made oath, that in the summer of 1853, the Alderney cow "Lady," belonging to Wm. C. Wilson, then in his charge and management, did at the period mentioned, give in one day, thirty-six quarts of milk, and that her daily yield was about the same before and after that period. (Signed)

WM. BROOKS.

Subscribed and sworn to before

HUGH J. MORRISON,

Justice of the Peace for Baltimore city.

Indiana County Agricultural Society.

The farmers of Indiana county, as we learn from the Register, met at the court house for the purpose of forming an Agricultural Society. They adopted a constitution well calculated to promote the object in view. A committee was also appointed to publish an address to the citizens of the county.

The following are the officers elected for the ensuing year:

PRESIDENT—Hon. Thos. White.

VICE PRESIDENTS—Wm. H. Coleman, Jacob Gamble, Samuel S. Marshall, Hugh M. Speedy, Moses T. Work, Wm. Evans, Adam Johnston.

CORRESPONDING SECRETARY—Jonathan Row.

RECORDING SECRETARY—George Shryock.

LIBRARIAN—John H. Lichteberger.

MANAGERS—James Hood, John G. Coleman, Robert H. Armstrong, David Ralston, James Baily, J. T. Vanhorn, S. Johnston.

☞ Upon referring to our mail books, we find that several of the above have omitted subscribing to the Farm Journal. Certainly no good farmer, much less an officer of an Agricultural Society, should hesitate about subscribing to the only Agricultural Journal published in the State.

Burning the Ends of Fence Posts.

A correspondent of the Ohio Farmer, gives the following common sense reasen for not adopting this practice.

'Tis known to be a fact that charcoal will not rot, hence the idea has obtained, that to char the posts will preserve them; but if the timber is scorched it will certainly crack into many small seams—and probably some of them from one to two inches deep—which of course will admit the damp and water about as freely as if the coal was not there; consequently the posts are injured and the durability *decreased.* Many years ago, I too was under the impression that to burn posts would make them last longer. I have been a cultivator of the soil for upwards of 55 years, and am now upwards of 77 years old, consequently have some experience in these matters.

The Oregon Pea.

J. L. DARLINGTON ESQ.—One of your correspondents, who signs himself "Horticola," inquires in the January number, of your Journal where he may be able to obtain certain *seeds*, which he names, and among which is the *Oregon Pea.* Permit me to inform him, through you, if you are acquainted with the writer, that I can furnish him with a small quantity of these peas (say one quart —possibly a gallon) in the latter part of the ensuing month. I own a small farm in Tennessee, where these peas have been grown two seasons, and from which I can get them through a friend who will visit this city in February. I obtained in the winter of '52 about a half a pint of seed, from which I presume more than a bushel was gathered in the fall of '53. The long continued and severe drought last summer cut the pea, as wellas the grain crops, short in Tennessee—and as the Oregon Pea, was not planted till May or June, it suffered greatly from the drouth.

Your correspondent also desires to know where he may obtain the "Chick Pea." Allow me to say that I was on the Island of Malta in 1852, where I saw the pea growing which he describes, and which is extensively grown and eaten there by *man* and *beast.* The *natives* (the poorer class) seem to make a very satisfactory meal off a three ct. loaf of wheaten bread and a few pennys worth of *Chiche* (as they call the vegetable) which they pick from the pods and eat raw. As there is pretty free communication between this city and Vallette in Malta, I think your correspondent will have but little difficulty

in supplying himself from that quarter. I know some parties here through whom any quantity he wishes to procure may be obtained, if he does not succeed in finding them nearer home and more readily.

If your correspondent will address me at this place I will do whatever I may be able, to put him in posession of the seeds refered to.

Begging you to excuse the liberty I have taken, in addressing these few lines to you instead of "Horticola", I remain, Very respectfully,

ALSTON B. ESTES.

New York, Jan. 13th, 1855.

United States Agricultural Society.

The Third Annual Meeting of the United States Agricultural Society will be held at Washington, D. C., on Wednesday, February 28, 1855.

Business of importance will come before the meeting. A new election of Officers is to be made, in which it is desireable that every State and Territory should be represented.

Lectures and interesting Discussions are expected on subjects pertaining to objects of the Association, by distinguished scientific and practical Agriculturists.

The various Agricultural Societies of the country are requested to send delegates to this meeting; and all gentlemen who are interested in the welfare of American Agriculture, who would promote a more cordial spirit of intercourse between the different sections of our land, and who would elevate this most important pursuit to a position of greater usefulness and honor, are also invited to be present on this occasion.

MARSHALL P. WILDER, PRESIDENT.
W. S. KING, SECRETARY.

Effectual Method for Destroying Rats.

A correspondent of the Genesee Farmer gives the following method for destroying rats. He says:

"One day a stranger came to the house to buy some barley, and hearing my father mention the difficulty he had in freeing the house of these disagreeable tenants, he said he could put him in the way of getting rid of them with very little trouble. His directions were simply these: mix a quantity of arsenic with any sort of grease, and plaster it pretty thick around all their holes. The rats, he said, if they did not eat the poison, would soil their coats in passing through the holes, and as, like all furred animals, they are very cleanly, and cannot endure any dirt upon their coats, to remove the offensive matter they would lick their fur, and thus destroy themselves. This plan was immediately put in practice, and in a month's time not a rat was to be seen about the house or barn."

Lime Water in Making Bread.

In bread-making, the vineous fermentation sometimes passes into the acid, thus rendering the bread sour and disagreeable. Leibig has lately performed a series of experiments to improve the preparation of bread, from which he comes to the conclusion, that the only effective and innocuous means of improving the qualities of wheat and rye bread, is lime water. In making dough he advises one pint of clear lime water to be used for every five pounds of flour. The lime water is first added to the flour, after which a sufficient quantity of common water is added to work the whole into good common dough—the leaven being mixed with water can be prepared by stirring some quick lime in a vessel containing pure cold water, then allowing the sediment to settle. The clear is then poured off and kept in bottles for use. No care is required respecting the quantity of lime, to be stirred in the water, as it will only take up a certain quantity of lime, and no more. Those who use saleratus (bicarbonate of soda) in the raising of bread, are recommended to cease its use, and employ pure baker's yeast and a little lime water. Our bones are composed of the phosphate of lime, and those who use fine flour require for their health a little more lime than is contained in the food. Cream of tartar and carbonate of soda are inferior to common yeast for making healthy bread.—*Scientific American.*

State Fair Premiums.

A number of premiums awarded by the committees at the late State Fair, remain in the hands of the treasurer of the Society. As the post office address of the persons thus alluded to is unknown to the treasurer, he has requested us to call attention to the subject, and to request all whose premiums are yet unpaid, to inform him how and where they may be sent.

Address Geo. H. Bucher, Hogestown, Cumberland county, Pa.

Snowden Township Agricultural Society.

Our friend Joseph Miller, when sending us a club of twenty subscribers adds.

We have formed an Agricultural Society here. We held our first Fair on the sixteenth of November last; it was late in the season, but we had a very good exhibition. It was in some respects better than the Alleghany County Fair. I am more in favor of township societies, than either State or County societies. In township societies you can enlist the whole community, but in the State or County societies you cannot.

For the Farm Journal.

Wool Growers Look to Your Sheep.

MR. EDITOR:—If wool growers would look more after their sheep and see that proper bucks are kept in their flocks, we would see more handsome and large sheep, carrying fleeces of fine long and compact wool, in place of the many long legged, misshaped sheep, carrying a light, open and coarse fleece of unsaleable wool, which will scarcely pay for producing it. But says one, when have we proper bucks in our flocks? I will tell you when you can be certain of it, and do not rest satisfied until you have your arrangements made for the coming fall; from now until you clip your sheep will be the last good opportunity you will have for arranging them properly for this year. Begin by throwing out all the worst formed sheep, from the flock you wish to breed from, and then when you wash, you can throw out those having coarse and uneven fleeces, and when you clip, you can tell by the scales which are too light fleeced to retain. Now make such marks on them that you will make no mistakes, and next fall put a perfect buck with your flock

of ewes, and you will find that the offspring will more than meet your most sanguine expectations. I have followed this method for a number of years, and the man that will follow the same method, will find that his sheep will be much sought after by woolgrowers. Perhaps the reader will ask what kind of sheep to breed from? I would answer Merino. For four lbs. of wool at sixty cents will amount to two dollars and forty cents, which is better than two at eighty cents; and five lbs. at fifty cents, which will amount to two dollars and fifty cents, or six lbs. at forty cents, which will amount to two dollars and forty cents, is better than one and a half lbs. at ninety cents; and that ten lbs. at forty cents, is better than four at eighty cents; yet I have exceeded any of the above calculations. Yours respectfully, J. S. G.

Tippecanoe Fayette co., Pa., Jan., 4th 1855.

Officers of the Schuylkill County Agricultural Society.

At an election held on the first instant, the following officers were elected. PRESIDENT Hon. J. Hammer; VICE PRESIDENTS, Joseph Rock and J. J. Paxson; RECORDING SECRETARY and LIBRARIAN, J. S. Keller; COR. SECRETARY, S. H. Madden; TREASURER Jos. Hammer; CURATORS DR. J. F. Freichler and Rubens Peale; for the ensuing year

For the Farm Journal.

A Remedy.

Some time since an inquiry was made through the Farm Journal, how to prevent a horse from carrying out his tongue. I will give the information, as it respects one I have, when driven with a small or common bit she will carry her tongue out, when I use a bit as large in circumference as described in your letter or larger, she does not do it. The bits above spoken of are Snaffles. I perfer a snaffle bit of the size above named for common use. I have used them nearly twenty years, and find them the best size for ease and comfort to the horse.

W. F. MYERS.

Presentation of Plate.

The Harrisburg correspondent of the North American in a recent letter says:

I witnessed yesterday evening a very interesting ceremony—the presentation to Mr. Robert C. Walker, of Alleghany county, Secretary, of the State Agricultural Society, of a beautiful silver tea set. The present is from some of Mr. Walker's Philadelphia friends, who witnessed with satisfaction, and were disposed thus to acknowledge his labor at the late State exhibition in your city. The set is of Philadelphia manufacture and exexquisite finish. It consists of six pieces, all ornamented by figures illustrative of the objects for whose promotion the Society was established. The presentation speech was made by James Gowen, Esq., of Mt. Airy, who discharged the duty in a very delicate and appropriate manner. Mr. Walker, fittingly replied, expressing his acknowledgments to the kind donors, and to Mr. Gowen, for the handsome terms in which he had offered this beautiful present. Mr. Walker, has been the Secretary of the Society from its origin, in the early part of the year 1851, and has devoted all his energies to the discharge of the duties of his office. He has labored zealously, intelligently and successfully. The Society has grown from weakness to strength, a strength to which Mr. W. has as materially contributed by his well directed efforts, as any connected with the management. The testimonials refered to was thus justly offered, as it was to a worthy servant of the Society, and an efficient promoter of its aims.

Horace Greeley's Farm.

Our cousin of the *Tribune*, among the more sensible of his "*isms*," has a farm in the neighborhood of Gotham which has been leased by George E. Waring, Jr., author of "Elements of Agriculture." His farm consists of some sixty-four acres in all, twenty-four of which are arable—the balance being rough pasture land. The arable portion is a rich alluvial deposite, about half of which contains some five miles of draining tile well laid down. If our friend Waring can practice, as well as he preaches in his "Elements," we may look for some valuable results from his farming operations. We shall be pleased if he will communicate his experience through the Farm Journal.

Dickey's Butter Worker.

An advertisement of this now almost indispensable fixture in every well managed dairy will be found upon the cover of the Journal. In confirmation of the accompanying testimonials of those who have tried the butter worker, we may add, that we had one of them used in our own dairy during the past year, and speak knowingly when we award it the credit of having already saved in labor alone its first cost,—to say nothing of the superior quality of the butter over that worked by hand. We have no hesitation in recommending this butter worker to dairymen, as being well worthy their attention, and preferable to any thing of the kind that has come under our notice.

Food for the Million.—Progressive Farmer.

A new and cheap agricultural paper has lately been started in Philadelphia under the above title by our enterprising friend Col. Spangler, formerly connected with the Farm Journal. It is offered at the low rate of twenty-five cents per year, and consists of eight pages in the quarto form. The first number, just issued, is illustrated with engravings and filled with excellent original communications, as well as editorial and selected matter, and also numerous advertisements. As this is the first attempt in this country to bring so cheap a paper before the farmers, we hope they will respond by sending in subscriptions by the ten thousand to the enterprising Colonel, who has shown considerable moral courage in so bold an undertaking. Five copies will be sent for one dollar. His office is at the northeast corner of Seventh and Market streets, Philadelphia.

Farmer's Reading Room in Philadelphia.

MR. DARLINGTON:—The plan of establishing a Farmer's Reading Room in some central location in Philadelphia originated with Dr. Elwyn some few years since, and we believe was then introduced by him to the notice of some of our county societies, to be opened both day and evening, to farmers visiting the city from all sections of the State, especially those who are in the regular habit of coming to the

city with marketing, once, twice or three times a week.

Although warmly advocated at that time by many of our country friends, the project fell through. Latterly it has been revived, and the suggestion made, that if the Farm Journal now about being removed to the city, instead of renting a room merely for its own accomodation, were to procure one large enough for the above purpose in addition, and place on the table of the reading room its agricultural exchanges from all parts of the United States, for the use of the farmer who might visit it; it would be a great additional attraction, and prove highly useful and convenient. It has been proposed, that the increased annual expense, thus incurred, should be defrayed by a small contribution, say $25. from each of the county societies around Philadelphia, whose members would more frequently avail themselves of the opportunity. Since the subject has been revived, we have made inquiry, and have ascertained that with such aid, a suitable large room can be obtained in a central location within a square of Market St. We do not know how far the Philadelphia Society would be disposed to aid in this project, but we think it would be equally, if not more advantageous to its members, than any others. Here would be a room, warm and lighted, and open at all times both day and evening to farmers and visitors. An arrangement might also be made for the Philadelphia Society to hold its monthly meetings there, and perhaps locate its library. By making these in this way more accessible than at present, its sphere of usefulness will be much extended.

A Farmer's Reading Room in Philadelphia of the kind proposed whether with or without connection with the office of the Farm Journal, strikes us as being a most capital idea, and beneficial to the Farming community in various respects. We have no doubt, it would in time be made use of as a kind of *Farmer's Exchange*, in addition. Instead of spending their evenings at the taverns, as market farmers now are obliged to do, they would frequent the reading room, not only to make use of the agricultural papers, but also, as a kind of common central point, where they would be sure of meeting their friends from various sections, in the same occupation. Interchange of opinions, transaction of business, and a general community of interest and feeling would result, the good effects of which we think would soon be felt. The Reading room, would soon be found to be a place where the best information could be obtained respecting the state of the markets, the prospect of crops, the introduction of new implements, improved breed of cattle, and where they could be purchased, the price of land in different sections, and all other matters interesting to the farmer. A FARMER.

We can inform a farmer that we have removed to Philadelphia, and occupy an office sufficiently large to answer the end he proposes, but we question if the sum he indicates would meet the additional expense.—Ed.

Deep Cultivation.

J. Lacey Darlington, Editor of the Farm Journal:—Having directed my attention somewhat to a deeper cultivation of the soil and the payable advantages arising therefrom, in the fall of 54 I purchased of P. Morris & Co., a Michigan Double Plow, and used it for plowing my oats stubble, (first hauling out the manure which covered but a part of the field,) and plowed it to the depth of twelve inches or more. Covering to that depth the manure and a greater part of the top soil, consequently it gave the field a different appearance than it ever presented before. A subsoil of five or six inches seemed but a poor prospect for a crop of wheat, and the question was frequently asked "What do you expect to raise on that field?" However I prepared the ground, (which was not more than half the labor than when plowed the usual depth] and drilled in the wheat. It came up uncommonly well and soon covered the ground. As to the average yield per acre, I cannot say, not having threshed all yet. But I am confident that on the manured part there was at least 35 bushels per acre. To the remaining part of the field, I applied 300 lbs. of Jourdan's Phosphate of Lime per acre, which did not benefit the wheat much but had an astonishing effect on the young timothy, forcing it to such a growth as to materialy injure the wheat. The grain on this part was perfect and weighed heavier than the other, but the wheat did not shell out—hence less the yield. In the spring of 54, I used the same plow for corn plowing the same depth. I plowed about six acres with it, leaving one acre in the middle of the field, for this I used a common plow, prepared the ground and planted the corn. It came up equally well all over the field, and no difference could be seen for two or three weeks, when there was a marked difference to be seen in the coloring of the corn. That on the subsoiled part was a pale yellow and looked rather sickly, while the other was a dark green and looked much more like making a crop. This had a tendency to *doubt* on my part as to its answering for corn. But as the season advanced so did the corn, particularly that which grew on the subsoiled part of the field, and in a few weeks there was also a marked difference decidedly in favor of that which was subsoiled; and the yield was one third more bushels per acre and of a superior quality. I have also used it for vegetables and find the same beneficial results. In conclusion I will say that I have full faith in subsoiling, and believe the Michigan Double Plow to be preferable to any other that has come under my notice, and as such would recommend it to others. Respectfully submitted,

CHARLES BARNARD.

Newlin, 1st mo., 6th, 1855.

For the Farm Journal.

Management of Poultry.

Mr. Editor:—I have no doubt that many farmers would find it greatly to their advantage if they would construct comfortable and convenient quarters for their domestic fowls. As I have tried a very good arrangement for some years and find it to be fully successful in breeding and raising poultry and procuring a large quantity of eggs, at all seasons of the year, therefore, by your permission I will describe my fixtures, and give an account of the management of the fowls, &c. My yard contains upwards of a quarter of an acre, and is enclosed with a picket fence four feet high, and is divided nearly equally into four yards by a lath fence. Each of these yards contains a house,—the first is situated in the southeast of the main yard, which is at the entrance, and is two stories in height, two rooms one above the other, the first room is seven by seven feet, and eight feet in height, plastered, with cement floor, two glass windows two by three feet facing the east and west, wooden door in the south gable end, has three inch strips laid on two by three's ranging from the floor to the ceiling two feet apart, a few nests on one side; this room is intended more particularly for a sleeping and living department; the upper room has the same dimensions except the height which is but five feet, overshoot roof with ornamental work around; double glass door covering nearly the whole south gable. This room is intended for a setting room and contains thirty nests for that purpose. The next house is situated in the north part of the main yard, and is similar to the first mentioned, except its having double glass doors covering nearly the whole south gable. This house is intended for a living room, though they both answer admirably, for the hens to lay in. The other two

houses are situated in the north western and south western corners of the yard and face the east, glass fronts and laying room attached. The hens pass out of these houses through a small hole with a slide door, deposit their eggs quietly, leave their nest, take a range around about their enclosure, partake of a variety of food which is prepared and set before them at all times. The food consists of corn, oats, buckwheat, mush, boiled potatoes, occasionly pounded oyster shells, old plaster, and some meat which is absolutely necessary. In the early part of the fall the fowls are selected and placed in the last named houses for fall and winter laying, provided as above. In the course of a very few weeks, they all commence laying and continue for a long time. Should they have a tendency to set, they are removed to the first named houses and yards and are kept there until cured, which is in two weeks or ten days; they are then returned to where taken from and soon resume laying again. In this routine they are kept until the middle of February and fore part of spring, which time we select our eggs for hatching. The hens become very much inclined to set after laying so very long, and stick closely to their laying rooms. At night we remove them to their sleeping room, place them on nests containing eggs, provide them with feed and water constantly, never leaving them out until the eggs are hatched. Under this treatment we invariably get a large number of fine large, plump, healthy chickens, seldom losing more than one out of twenty-five until maturity. When the chicks are hatched the hen and chicks are put into a packing box with lath nailed on the one side, wide enough for the chicks to pass through. Occasionally the old bird is allowed to range with them. The chicks are fed on Indian meal moistened with a little water, and fresh water which is absolutely necessary, as water does not cause sickness as some persons suppose; and in fact, we find that it is bad management that principally creates sickness. The houses and fences are white-washed three or four times a year and kept cleanly. As to profit we find them to be pretty nearly all clear gain on a farm. I will simply add that the fowls, which my yard is stocked with, were bred from a cock and two hens which came in the ill fated steamer City of Glasgow, March twenty-second, 1853, and are Chochin China, cinamon and buff variety; they had a rough voyage, causing one of the hens to become very sick, consequently I lost all of her eggs the first season. The other hen and cock were in fine health; she produced me some fifty fine strong well formed fowls of a uniform color the first spring. I tried others which I purchased from several gentleman in this country, but they would not give general satisfaction; consequently I abandoned them. I find my own importation give full satisfacton, particularly abroad, as I have sent a considerable number to gentlemen in different States. I am aware there is a prejudice with many persons against this breed of fowls, but if they should once procure the true breed I think it would be speedily removed, as they posess highly superior qualities being neither large consumers, ill formed, ungainly or coarsed fleshed, but precisely the reverse, being in a high degree richly flavored, juicy, fine grained, medium bone for so large a fowl, and easily fattened. It would be advisable, however that farmers be careful whom they purchase fowls from to stock their farms with, as there are fowls offered for sale as pure shanghais, which have actually bred fowls with crests upon their heads. I should observe that it is not necessary for so large an arrangement need be constructed, as one fourth of my place would be ample to breed some two hundred head. Respectfully, G. E.

Ever Green Cottage, Dec., 24th, 1854.

Want of space compels us to postpone till our next several articles intended for this number.

Will Ashes Dissolve Bones?

Owing to the indisposition of farmers generally to use sulphuric acid in reducing bones to pulp or powder, many persons knowing the value of the bones cast away from the kitchen, of every farm house as worthless, have racked their brains to discover some means of turning them into account. Some have had them broken and ground like plaster, which when mixed with the soil becomes a valuable and lasting manure, but not very speedy in its operation. It has been known to many that bones heaped together and covered with some moist substance would heat and soften, and could thus be prepared for the field; but the best account we have seen is the following, given in a recent number of the Country Gentleman.

If the question be asked, will ashes dissolve bones? the answer is, no, not in the proper sense of that term, not as water dissolve sugar or salt. But if it be asked whether ashes will reduce bones to a condition in which they will be speedily available to plants, the answer is, yes. The Hon. Philip Pusey, ascertained several years ago, and, after carefully experimenting upon the discovery three or four years, published in the Journal of the Royal Agricultural Society, that bones, if placed in a pile and covered over with wood ashes, of fossil coal, leached ashes, common soil, or sand even, will heat and crumble to powder. He showed, as the result of careful experiments, several times repeated, that bones treated in this way become a valuable manure; and upon the strength of his own experience, he recommended this course to English farmers.

A friend of ours, in whom we have entire confidence, informs us that seven years ago he fell into the practice of reducing bones by means of ashes, by a sort of a fortunate blunder. Being at the head of a very large family, in which fresh meat was largely consumed, he found that his Irish cook was in the habit of throwing all the bones out of the back window. This drew such a bevy of dogs, with voices, bass, tenor and treble, about the house, that it was impossible to sleep quietly. In order to withdraw temptation from the dogs, and to preserve the bones for the use of his land, to be prepared in some way then unknown, he ordered the bones to be carried and put into an old sugar hogshead, placed in a grove at a little distance from the house, and the ashes from the kitchen to be thrown on them, the hogshead to be uncovered that the rain might fall into it. Whenever an offensive smell arose from the bones, which was only in dry weather he found that a little water thrown on prevented it. As soon as the first hogshead was full, another was placed by it and filled, and then another. His intention was to use the ashes and bones on Indian corn, supposing that by the next spring the bones would be somewhat softened, so much so that they might be pounded to pieces with a sledge hammer on a flat stone. The hammer and the stone were actually procured for the purpose. But no bones were found, except near the top of the hogshead last filled. Instead of the bones, were found soft saponaceous masses, retaining the form and size of the original bones, but none of their hardness. They were easily cut with a shovel and mixed with the ashes; and when so mixed and applied to corn at the rate of a half pint to the hill, they proved an excellent manure for corn.

Mr. Curwen's Devons.

We have on hand, but too late for present number, the pedigrees in full of the superior Devon Bull, and three cows lately purchased by Mr. Curwen for his farm in Montgomery County, Pa.

We shall publish them in our next.

PENNSYLVANIA FARM JOURNAL

VOLUME 5. PHILADELPHIA, MARCH, 1855. NUMBER 3.

For the Farm Journal.

Shading Poor Land.

BY J. S. HOUGHTON, M. D.

I am not one of those who believe that mere shade is, in itself, equivalent to manure, or that shade really creates any materials of value in the soil so shaded. But I believe that it is highly important to keep all land, and especially that which is light and porous, and comparatively poor, well shaded during the hot season, in order to prevent the too free evaporation of the gaseous elements of plants from the soil.

Under good management, and especially where land is well manured, no fields should be permitted to lie idle, broken into ridges, and uncovered by the foliage of growing plants, making some kind of crop. The loss caused by neglect of this rule, both by want of shade, and by the exhausting influence of weeds, is greater than the profit to be derived from any single crop that can be grown.

I am induced to write this article for the purpose of bringing to the attention of farmers two occasions on which the best farmers in Virginia resort to shading the land as a means of protecting the soil from exhaustion, and two means by which they do it, which appear to me to be worthy of extended imitation everywhere. We are in the habit of supposing that the farmers of Virginia are behind the age, in improvements and methods of cultivation; and so they are, many of them, just as many of our farmers are in Pennsylvania; but in the art of renovating exhausted soils, I am of the opinion that there is as much skill exhibited by a few planters in Virginia, as there is in any part of the United States.

The two plans for shading light soils in summer, above alluded to, are as follows:

The first is *top dressing clover immediately after mowing*, the same day or the next morning, with a view to shade the plants and the soil. To effect this object long manure is employed, leaf mould, dried peat, muck, loam, or any other carbonaceous matter; or if these materials be not abundant on the farm, then a light drilling of plaster of Paris and salt is employed, say one or two bushels of plaster, and a bushel or less of salt, to each acre. The heavier the dressing is on light soils, of course the better; but even the slight coat of plaster and salt is said to be highly beneficial, shading the naked plants, to some extent, and keeping the land moist, and preventing the too rapid evaporation of valuable gases. One of the best farmers in Virginia, from whom I obtained this hint, is celebrated for his success in improving poor soils, and he attributes much of his success to top dressing clover with plaster, or plaster and salt, coarse manure, &c., as above described, immediately after mowing in hot weather. I think the suggestion a very valuable one, and strongly advise the trial of it by farmers generally, when the soil is not well covered with clover.

Another method of shading the soil much practiced in Virginia is the sowing of the field pea immediately after wheat, or any other crop, is removed, when the land is not to be used directly for any other seed or vegetable crop. A fair growth of vines may no doubt be obtained even as far north as Pennsylvania, before cold weather, to be turned under as a fertilizer; and as the pea grows very quickly, it will soon shade the ground, especially if sown broadcast. The merits of the field pea for this purpose, and as food for stock, I have discussed at length in other articles in the Farm Journal. If it is found that the pea will not make sufficient growth to pay for the expense of sowing it, after wheat or oats, (which I do not anticipate,) then the farmer may try corn fodder, (corn sowed thickly in drills or broadcast,) or corn and buckwheat, or buckwheat alone, to be used as a green manuring crop. The seed of either of these plants would cost but little, and the benefits to be derived from the shade afforded by the peas, corn and buckwheat, with the additions which they would make to the soil, and the absence of weeds would afford a good profit on the expense and labor.

In some of the Northern States, it is the custom among the best farmers to top dress timothy fields with manure immediately after mowing, and the result is that a second growth of grass is obtained, half the weight of the first, on land which, without such treatment, would scarcely afford decent grazing.

As all farmers may not have manure to spare for grass lands, to be used in this way, I do not expect the practice of summer manuring to be very generally adopted; but surely all farmers might find some kind of top dressing, such as muck or leaf mould, to be used chiefly for shading clover lands; or if not this, they could dress them with plaster and salt. For fields which have been stripped of their crops (as on truck farms,) early in the season, and cannot be worked with any crop requiring much cultivation, there is no plant equal to the field pea for shading and enriching the soil.

Philadelphia, Jan., 1855.

Reported for the Farm Journal.

Meeting of the Philadelphia Society for Promoting Agriculture.

Philadelphia Society for Promoting Agriculture, stated meeting at room, Masonic Hall, South Third street, Wednesday morning, February 7, 1855.

Mr. Landreth, President, in the chair. Minutes of preceding meeting read and approved. Messrs. Paschall Morris and Andrew M. Spangler were elected life members. One proposition for life membership and two for resident contributing membership were received.

The Secretary reported having distributed copies of the published minutes of the Society from 1785 to 1810 to a number of kindred Societies. Letters from Mr. H. Meigs, Secretary of New York Farmers' Club, and from Mr. J. W. Degreau, Secretary of the Brooklyn Horticultural Society, were read, returning thanks for copies. A pamphlet containing the address of Mr. Degreau before his Society was received.

Dr. Kennedy, in behalf of the Committee on Agricultural Statistics of Pennsylvania, reported that the Committee had learned since their appointment that the State Society was engaged in a similar object, and in furtherance of it had already sent printed questions to nearly all the county societies in the State. To some of these, replies had been received and been printed in the volume of the proceedings of the State Society, published by authority of the last Legislature. It was true that no such questions had ever reached this Society, nor was any account of the Philadelphia Society contained in the volume aforesaid; nevertheless the general subject of State statistics more properly belonged to the State Society. That body had already commenced the good work of collecting definite information, and as action on our part might be regarded as interfering with theirs, he (Dr. K.) moved that the Committee be discharged, which was so ordered.

Dr. A. L. Elwyn feared that the State Society would not succeed this year in obtaining the publication of its proceedings by Legislative enactment.

H. Ingersoll proposed to amend 19th By-Laws, so as to render the President eligible for more than two terms.

Dr. Kennedy moved that the Executive Committee be requested to report at next meeting on the expediency of the Society's holding an exhibition next autumn.

Voted, on motion of Dr. Kennedy, that delegates be now elected to represent this Society at the next session of the United States Agricultural Society, to be held in Washington on 28th inst.

Voted, on motion of A. S. Roberts, that the delegation be appointed by the chair, and that they have power to fill vacancies; whereupon the following gentlemen were appointed: A. L. Kennedy, A. T. Newbold, A. S. Roberts, H. Ingersoll, J. McGowan, C. W. Sharpless, A. Clement, S. Williams, J. S. Haines, S. C. Willits, G. Blight, C. W. Harrison, Gen. R. Patterson, J. Pearson, and S. C. Ford.

Dr. Elwyn laid before the Society samples of dust from the flues at the foundry of Mr. Chas. S. Smith. This dust collected in large quantities both from the bituminous and anthracite coal fires. It has been spread on land, and was believed to produce about one-half the fertilizing effect of guano. Further experiments were necessary before the exact value could be determined. These he hoped members of the Society would make. For such a purpose they would cheerfully be furnished with a supply on applying at Mr. Smith's iron works. The researches of chemists and the introduction of guano had done much towards directing the attention of farmers and others to concentrated manures, and the employment of waste products. The samples before the Society were evidences in point. Further investigation would reveal many substances now mere refuse, which either alone or in mixture would prove rich boons to the agriculturist. Dr. E. had learned that during last season, guano had not proved equally beneficial to the land of Chester county on which it had been used; when mixed with lime the effect had been much more manifest.

Mr. A. M. Spangler had had occasion to observe the comparative yield of land manured with guano and with superphosphate of lime, and in nearly all cases had the latter proved more advantageous, and this not only on wheat but on grass. Moreover grass and hay from land thus manured were much better relished by cattle. This fact was beginning to be well understood by farmers. He had recently been offered a lot of hay from Delaware county at the full market price, and one of the recommendations urged by the vendor was that it had been cut from "boned" land. Such hay had been said to support cattle better. He would ask for Mr. Clement's opinion on this point.

Mr. A. Clement had observed no proof that such hay was more nutritious. He knew that cattle were fond of it, and would select it in preference to all other.

Mr. S. C. Willits preferred guano, but having been unable a few years since to find any in this market, he had purchased some superphosphate of lime, and at the same time a quantity of a material called "Fertilizer." He had spread 47½ bushels of each on equal parts of the same field, leaving a portion unmanured, and from that day to this he had been unable to discover any appreciable difference in the crops. He, of course, knew nothing of the purity of the articles which he had purchased, nor could any farmer know until there was a State Chemist appointed, whose duty it should be to inform us of the nature of our soils, and guard against fraud in concentrated manures. Guano had been placed on a field adjoining the above, and its effects three years after wheat, were markedly favorable, yielding about 1½ tons timothy to the acre. A portion of his farm of 135 acres had formerly belonged to Mr. Walker, once a well known "book farmer" of this county, who before the days of bone dust had heavily "boned" the land, putting on the bones, for the want of suitable mills, in large pieces, many of which now remained undecomposed.

Dr. Elwyn inquired what redress the farmer had in case advertised manure failed to come up to the assurances of the vendor? Were such manures like quack medicines, sold for cash, the buyer losing both time and money? He had recently seen a decision of an English court on the subject, which seemed to him peculiarly just, and one which he hoped would be sustained in this country. A farmer had bought on credit a quantity of concentrated manure, warranted to produce a certain

result. The crop not equalling the gain guaranteed, the purchaser declined payment. The vendor brought suit, but failed to recover; the court holding that he had not complied with his terms of the contract.

Mr. Roberts had sown guano on his lawn. The first year the grass was beautiful, the second inferior, the third worse than before the manuring. He should buy something else.

H. Ingersoll, Esq., stated that his experience agreed perfectly with that of Mr. Roberts. He deemed guano too stimulating, acting, so to speak, as a blister, and when the stimulus was over, say in three years, leaving the soil poorer than before.

Mr. Isaac Newton had a large estate in Virginia. Four years ago he had sown six hundred acres of worn out lands near the Potomac with guano. The yield of wheat was wonderful, and the clover which had been plentifully sown at the rate of ten quarts of seed to the acre, was most luxuriant. The year following he had it spread with plaster, turned the clover under and guanoed again. The crops since had been very fine. Last year was not favorable to guano on account of the drought. That manure needed moisture. In Virginia the practice had been under slavery to sow no grass seed with their wheat. Give him guano, free labor, grass seed, and a little plaster, and he would undertake to renew, in a short time, all the worn out lands in the Old Dominion. Adjourned.

Renovating Old Meadows.

Mr. J. L. Darlington:—Would you oblige a subscriber by inserting in your next number a piece, informing me how to regulate an old meadow, and also to answer these questions:

1st. Whether old meadows should be invariably plowed?

2d. Will not lime, top dressings of compost and manure, together with drainings, revive old meadows?

3d. What is the best way of renewing grass seed in old meadows, and the best kind to sow?

4th. What kind of drains are the best, and the manner of constructing them?

5th. Cannot the farming of old meadows be obviated by proper management?

Allow me to suggest to you the benefit arising from the publishing (in your numbers) of Leibig's Agricultural Chemistry, the reading of which would diffuse a spirit of investigation and close observation among the intelligent portion of your readers.

The answering of the above in your next would much oblige An Earnest Inquirer.

In reply to our correspondent, we answer that the *first* and most indispensable preliminary to getting an old meadow into a good productive condition is thorough *draining*. Without this being first done, lime, compost and manure are very nearly thrown away.

After being well drained, and its unhealthy condition thus meliorated, a heavy top dressing of lime may be applied, and seed of timothy and herd grass sown in the fall. These will, *in time*, take root, and crowd out the rank and coarse herbage, provided there are insuperable difficulties to plowing it, which without any doubt would be the speediest way to get it into good condition, and is decidedly to be recommended. If our friend's meadow is of great extent, part might be plowed each season.

We once had a piece of over two acres of land on our farm wet, marshy, and overgrown with tussocks. A small part higher than the rest contained some good grass, which, when mowed, had to be carried off by hand, a horse and cart sinking down so deep on any other part as to be unable to get out without the greatest difficulty. By the following process we brought this meadow to be the most productive and valuable two acres on the farm. We first cut a wide open ditch on the lowest side, into which we run what are called French or covered drains, intersecting the meadow in various directions, so as to catch the heads of all the springs, which were made to run into the one open outlet. The surface soon showed indications of becoming dry, and the rushes and coarse grass, which only can thrive in a wet, spongy soil, soon began to dwindle. The following spring we had a large, stout, steel hoe in the shape of a V made by a country blacksmith, with which we cut off all the tussocks, piled them in heaps, and burnt them as soon as they became dry. When these were off, the surface of the meadow looked tolerably level and respectable. The next thing was to obtain the large iron township plow and four stout yoke of oxen, and the way they turned up the black vegetable mould, about ten inches deep, was a caution to all shallow plowmen. Occasionally the point of the plow would stick into a half decayed tussock root, and hoist the plowman several feet off the ground, when the team had to be backed and begin again, to the great amusement of the passers by. When the plowing was finished, one hundred bushels of lime were applied to the acre, and a crop of buckwheat sown. The next spring (the third) oats was sown, and a heavier crop of oats and straw obtained than had ever been known in that part of the country. After this it was put down with rye and grass seeds, and is now perfectly smooth, and as dry and well set with grass, and more productive, than any part of the farm, paying about fifty per cent for all expenses.

The covered drains alluded to above are very simple and economical, skill of course being required *where* to dig them, so as to head the springs. A thin wall of rough stone, to be gathered off of most farms, is made on each side, and covered over with one long enough to rest on the side walls, the openings being filled up with smaller stones, so as to prevent dirt from falling through. Inverted sods are then placed on top, and the whole covered up with dirt, offering no obstacle to cultivation, and no unsightly and expensive open ditches. We used merely the rough stones from the fields, wherever they could be gathered, and considered it quite an economy to get rid of them.

In case of the bottom of the drain being soft and inclining to quick sand, old boards should be laid in the bottom along that portion for the water to run over. These being always under water will last a long time. If something of this kind is not used in such places, the side walls would be apt to tumble down.

We have thus answered all the queries of our correspondent, and hope from time to time to attend to the latter part of his request.

Work for the Month.

Farm.—Clover seed should now be sown before the ground becomes hard. Five or six quarts is about the proper quantity for an acre. Timothy, green grass, &c., if not sown in the fall, should no longer be delayed. It is scarcely necessary we should add, use none but clean seed. In many parts of this country farmers will do well to manure their corn ground with barnyard manure in the spring, and use guano and superphosphate of lime in the fall for their wheat, thus making more corn and more wheat. Corn ground should be plowed in this month, and where the soil is not very light deeply subsoiled. The oats ground should also be prepared and sown as soon as the weather will permit, sowing from two to three bushels per acre. After harrowing the ground should be rolled, as should mowing and pasture land. When mowing fields are stony, the stones should be carefully picked before rolling, and while the ground is comparatively bare of grass. Plaster should be sown early this month, so as to have the full benefit of the spring rains. When guano is used as a top dressing, it should be in connection with plaster, or some other substance that will fix the ammonia. Top dress winter grain which was not manured last fall. Plant potatoes for early crop, as soon as the ground will admit. Give particular attention to cows which have calved, and ewes lambed. Succulent food, such as turnips, carrots, beets, &c., increases the flow of milk, and should always be given in addition to grain and hay. Feed the mothers well, is the true plan to make good calves and lambs. Have a piece of early pasture ground to turn them on. Give extra feeding to working cattle. At leisure times, clean out thoroughly and whitewash poultry houses inside. Open the mouths of drains.

Fruit Orchard.—Attend to directions of last month, and perform what was omitted. Planting trees in this section can be done during this month. Select the best varieties of fruit trees, and plant apple trees from 35 to 40 feet apart; peach, pear, plum and cherry trees 20 feet apart; dwarf pears from 10 to 12 feet apart. Grafting may be done this month. Prepare grafting wax by mixing three parts of bees-wax, three parts of rosin, and two of tallow. Plant out gooseberry and currant cuttings, first removing all the lower eyes. Trench and prepare the ground thoroughly with short manure. Grape vine cuttings should be planted with two eyes out of the ground, and in a soil rather sandy and moist. Trim grape vines at once, if not already done, and dig in around the roots well rotted manure. Strip off of all trees cocoons and larvæ of insects, and apply wash before recommended. Apply salt to quince trees. Manure and clear up strawberry and raspberry beds, and make new plantations of each. Uncover such of the latter as were laid down last fall for protection.

Vegetable Garden.—The operations of the garden for this month must depend on the weather, and the condition of the ground. Seeds not easily injured by frosts should be sown, such as peas, beets, parsnips, lettuce, radish seed, onion seed and sets, early carrots, asparagus seeds for new beds; and plant out two year old roots, cabbage seed, &c. If the weather is suitable, cabbage, lettuce and cauliflowers may be planted out from frames. Uncover spinach, parsley, lettuce, &c. Trench ground for horse-radish, and set out pieces of old roots in rich soil. Dress up rhubarb, and manure thoroughly if not already done. Give close attention to frames, &c., and cover on cold nights. Give air on fine days. Tomato, pepper and egg plants, which have grown thickly, should be pricked out into other frames. Start Lima beans in sods inverted, within doors, so as to be ready for planting out for early crops, as soon as the weather is settled. Set out beds of sage, sweet marjoram, winter savory, pennyroyal, and other perennial herbs, by dividing the roots of old plants. Plant sweet potatoes in hot beds for sprouting, and cucumbers in frames for forcing. As a general rule in gardening, make deep soil, manure heavily, and use plenty of seed. Better to thin out than have to re-sow.

Flower Garden.—This is a busy month in the Flower Garden. Remove the covering from the roses, and all half hardy things. Loosen the fastenings of junipers, Irish yews, &c., by which they had been secured against winter storms. Prune roses and flowering shrubs. To prune roses, observe in the running varieties to cut as much old wood as possible, leaving only shoots of the previous summer's growth; shorten them one-third, and secure them firmly to the trellis or stake. Daily roses treat as above, only shorten their shoots two-thirds. The hybrid perpetuals and hardy garden roses should be pruned back to three or four eyes of the old wood. Roses will give more satisfaction by being closely pruned than otherwise. In pruning shrubs, cut out any dead wood; thin out the branches where they crowd each other; shorten any straggling branches; by this means they will assume a good shape. Secure honeysuckles, clematises and other running vines firmly to their trellises. Manure liberally roses and flowering shrubs. This is a good time to plant all kinds of shrubbery and evergreens, and all kinds of hardy biennials and perennials. All such as have grown too large should be taken up, separated and re-planted immediately. Remove the covering of leaves or litter from the tulip beds, or other articles which had been protected by them during the winter. Tulips, hyacinths, and all other hardy bulbs, may be planted early this month. Trim and re-plant box-edging. Manure and dig flower beds. Sweep clean and roll well lawns and grass plats. Laying sod should be attended to this month. Clean and roll gravel walks and add more gravel where required. Now is the time to raise annuals from seed for early planting. Plants in windows, which have done blooming, should be removed to a cooler place, and their shoots shortened considerably. Plants in cellars should have air admitted to them freely in mild weather, and be watered more liberally than during winter.

Answers to Questions.

In our last number, page 39, a correspondent enquires "why wheat grows and yields better on a clover sod plowed three months before sowing than on that plowed only a few days before."

Without knowing any of the particular circumstances of the case, such as the amount of green crops plowed down, &c., we should attribute such a result to the fact of the fermentation and decomposition having been in great part completed, and the surrounding soil having

become enriched by the fertilizing gases which had penetrated every portion of it, thus making it fit for the reception, growth and nutriment of the seed. It should be recollected that in the excessive fermentation and decomposition of a heavy green crop immediately plowed down, a very considerable expansion of the soil is produced, as well as fertilizing gases liberated. This may possibly render the soil too open at the critical period of the germination of the wheat, and the immediate stimulus from the enriching gases thus liberated produce a too rapid and unnatural growth of vegetation. The effect might be similar to that from a heavy dressing of unfermented manure, which we think should never immediately precede the sowing of a wheat crop. An over rapid growth of any crop is not always a healthy one; a regular, continued, natural progress to maturity of a crop unchecked and not stunted by sudden changes is more likely to result in a heavier yield than with an unnatural stimulus created at one of its stages, and which cannot be sustained throughout.

Another cause of the difference alluded to no doubt is that with clover immediately plowed down before seeding, the wheat cannot either be drilled or harrowed in with evenness and regularity.

As to the second query of our correspondent, "why committees award premiums on implements that are good for nothing, and that they know nothing about." The reason is that at our exhibitions the duties of committees are too laborious, and they have not *time* to make the necessary examination. The committees are too few, and the implements to be examined are too many. Instead of having the very large number and great variety of implements, as at present, under the supervision of two, three, or even four committees, they should be more subdivided. There should be a separate committee on plows, one on corn shellers, another on cultivators, one on straw cutters, another on lime spreaders, a separate one on reapers and mowers, another on churns, &c. In this way the examination would be thorough, the decisions more satisfactory, and justice better rendered to contributors. As generally managed it is physically impossible for committees to do what is required and expected of them.

Third query. "Will sheep sustain any injury from hen lice?" Of course they will, and no decent farmer who had any regard for his sheep would subject them to so foul an influence. Hen lice will hurt sheep just as much as people, and we should as little think of placing our sheep among the hens as to quarter ourselves among them, or permit our farm hands to do so. Cleanliness contributes to the health of animals as well as people.

Lime and Fancy Farmers.

We extract the following remarks from the reported proceedings of the Massachusetts Legislative Agricultural Club, not for the information it contains, but to show the nonsense that is palmed off for sense, by intelligent men undertaking to enlighten the world on a subject of which they appear to be profoundly and ludicrously ignorant:

"Mr. Bull remarked that Mr. Brown, of Concord, who had raised fine crops of wheat, had made use of lime to the extent of 15 bushels to the acre, sown broadcast, and perhaps to this manure his good crops were attributable."

"Mr. Bradbury, of Newton, said that in the wheat-growing counties of Pennsylvania and Maryland, great quantities of lime were used, and it was considered indispensable. They formerly raised large crops of wheat without any manure; but their lands gave out, and geologists advised the farmers to apply lime. They did so, and the result was that they obtained as good crops as ever. Lime was generally abundant, but its good effect was so obvious, that the farmers in the non-limestone counties transported limestone from the others to manure their lands. In some parts of these States the roads are macadamized with limestone, which, becoming finely pulverized, is blown by the wind upon the adjoining fields, and has a sensible fertilizing effect upon them. It is the practice among farmers in Cumberland, Dauphin and Franklin counties in Pennsylvania, and in Maryland, to apply 80 bushels of unslacked lime per acre once in about seven years, plowing it in after it becomes pulverized by the action of the sun and rain. They do not expect much from it the first or second year, but during the third and fourth they reap the benefit."

"Hon. Seth Sprague asked, what was the action of lime? It had been said that it exhausts land. Is it so? He had seen little benefit from lime on sandy land. Mr. Jenkins said two of his neighbors used several wagon loads of lime on various crops. The effect was rather injurious."

We fancy we see a smile, perhaps of derision, playing upon the faces of the farmers of Adams, Berks, Bucks, Chester, Cumberland, Dauphin, Delaware, Franklin, Lancaster, Washington, and many other counties in this State, where lime is used in large quantities, on learning that lime is applied at the rate of eighty bushels per acre *before being slacked.*

Rolling Pasture and Mowing Fields, &c.

We would especially encourage at this season, the use of the field roller, not only on grass fields but also on the wheat. The advantages of it are not fully estimated or its use in the spring of the year would be more common. Independent of the benefit of reducing down inequalities of surface, and making a field more level for the operation of the reaper or mowing machine, or even scythe, it presses the earth around the roots, which had been heaved up by the frost, and which by exposure to the sun and air, would otherwise be destroyed. We have seen roots of clover, as has every farmer, on fields recently seeded down, raised entirely out of the ground by the alternate freezing and thawing in the spring. The roller closes up these open fissures, compresses the soil around them, and thus prevents their being entirely killed off. Many of the bare places to be seen in fields, are attributable to this cause, more than any other. We are often astonished, and indeed somewhat disheartened, to see intelligent farmers, who take the greatest pains to have their fields well set with grass, buy only the best quality and extra quantity of seed, considering the loss of the grass field in their usual rotation greater than even the loss of a grain crop, and after having done every thing *else* to attain the desired object, yet entirely neglect the use of the roller in the spring, particu-

larly on such fields as have been recently seeded. It seems a blindness to their own interests entirely inexplicable, and inexcuseable to us as the *theory* of rolling and operation are both so simple.

These remarks will also apply with equal force to the wheat field.

In seeding oats, its use is more common, although the effects are no more beneficial. It breaks the clods and presses earth to the seed, much of which would otherwise be uncovered and lost.

The proper season for rolling is also important, as if done too early, and before the severe freezing spells are past, the ground will become poached by the animals' feet and much injured. If left too late till the ground becomes hard, but little comparative benefit will result. Every farmer can judge for himself of the right time.

The best wooden rollers are made of two sections, with an iron bar passing through each, and should be at least three and a half feet in diameter. A box may be constructed on the frame over the roller, to contain the stones collected on the field. We do not know the cost of these, but iron ones we believe may be obtained at a cost of about $50, six feet long and thirty inches in diameter, consisting of six sections, with box and tongue complete. They are of course more durable and greatly to be preferred.

Shropshire Sheep.

A new and distinct breed of sheep are now exciting some attention in England under the name of Shropshire. They are described as of a large and robust character, and the breeders in the county of Salop, adjoing Worcester and Warwick, where they may now be found, appear to have originated their present distinct type by following the example of Ellman with respect to the Southdowns.

Commencing with the very excellent breed, which has existed in that section for many centuries, they have now obtained a much larger size and greater aptitude to fatten; and the only question would seem to be, has *fixity* of type been obtained, so that their present characteristics may be perpetuated?

Several sales have been made the past season, when shearling rams have brought as high as $100 to $150, and ewes $20 to $30 per head. One ram sold for $250.

There is no evidence at present to show in what respect, if any, Shropshire sheep are superior to Southdowns, and we shall continue to prize the latter till we see the plainest kind of testimony to prove that they are not deserving of their present high position, as the best breed of sheep for the carcass, which we opine will not be very soon.

A New Plant---Holcus Saccharatus.

Our foreign exchanges advise us of a new plant under the above name being introduced into France from the north of China, which promises to be of considerable value. A pamphlet has been published on the subject by M. Louis Vilmorin, of Paris, who is considered high authority, from which it appears that the juice of the Holcus furnishes three important products, sugar, alcohol and a fermented liquor analogous to cider; and that it may be profitably cultivated for sugar in any region between where the sugar cane ceases to thrive and the forty-fourth degree of latitude, and that *elsewhere* it will be profitably cultivated for its alcoholic products.

He obtained from stems, from which the peel had been stripped, at the rate of fifty-five to sixty per cent. of juice. The upper joints and spikes were only cut off, but by cutting off more and subjecting the stems to a better process of crushing, he thinks that seventy per cent. of juice could be obtained. The quantity of stems employed, large and small together, was 553 lbs., giving twenty-three gallons of juice of the density of 1.052. The quantity of sugar from the Holcus is estimated higher than from the beet root, but involves more labor and expense to extract, and the quantity of spirit exceeds that from beet root by about sixty gallons per acre. The amount of juice yielded from an acre is about 1207 gallons.

The refuse also consists of excellent fibre, easily extracted and easily bleached, and worth at least $50 per ton to the paper makers, and probably much more.

A more detailed account of the process of cultivation in France is about being published.

Fruit Catalogue for General Cultivation.

We have lately received a copy of the report of the American Pomological Society, at its last convention in Boston. It contains very much of interest and importance to the fruit grower, and we have made in the present number of Farm Journal copious extracts, which we shall occasionally continue. As the season is now at hand for planting fruit trees, we give below the last revised list of fruits recommended by the society for general cultivation. It contains several alterations and additions from the first one published, and is eminently worthy of attention, combining as it does the long experience of our most distinguished Pomologists from all parts of the United States. Many fruits of local interest and value are of course omitted, but the list, as far as it goes, is entirely reliable. The biennial meetings of the American Pomological Society have developed a vast amount of information, and have been of immense advantage to the cause of Pomology.

We give on another page, from the appendix to the report, the valuable communication from Dr. Harris, on the diseases and insects affecting fruit trees and vines, which we especially commend to all our readers.

Fruit List of American Pomological Society for General Cultivation.

APPLES.

American Summer Pearmain,	Melon,
Baldwin,	Minister,
Bullock's Pippin,	Porter,
Danver's Winter Sweet,	Red Astrachan,
Early Harvest,	Rhode Island Greening,
Early Strawberry,	Roxbury Russet,
Fall Pippin,	Summer Rose,
Fameuse,	Swaar,
Gravenstein,	Vandervere,
Hubbardston Nonesuch,	White Seek-no-further,
Lady Apple,	William's Favorite (except for light soils,)
Ladies' Sweet,	Wine Apple, or Hays,
Large Yellow Bough,	Winesap.

PEARS.

Ananas d'Ete, Lawrence,
Andrews, Louise Bonne de Jersey,
Belle Lucrative, or Fondante, Madeline,
d'Automne, Manning's Elizabeth,
Beurre d'Anjou, Paradise d'Automne,
Beurre d'Aremberg, Rostiezer,
Beurre Diel, Seckel,
Beurre Bosc, Tyson,
Bloodgood, Urbaniste,
Buffum, Uvedale's St Germain (for baking,)
Dearborn's Seedling,
Doyenne d'Ete, Vicar of Winkfield,
Flemish Beauty, William's Bon Chretien or
Fulton, Bartlett,
Golden Beurre of Bilboa, Winter Nelis.

FOR CULTIVATION ON QUINCE STOCKS.

PEARS.

Belle Lucrative, Napoleon,
Beurre d'Amalis, Nouveau Poiteau,
Beurre d'Anjou, Rostiezer,
Beurre d' Aremberg, Beurre Langlier,
Beurre Diel, Soldat Laboreur,
Catillac, St. Michael Archange,
Duchess d'Angouleme, Triomphe de Jodoigne.
Easter Beurre, Urbaniste,
Figue d' Alencon, Uvedales St Germain or
Glout Morceau, Belle Angevine, for baking,
Long Green of Cox, Vicar of Winkfield,
Louise Bonne de Jersey, White Doyenne.

PLUMS.

Bleecker's Gage, McLaughlin,
Coe's Golden Drop, Purple Gage,
Frost Gage, Purple Favorite,
Green Gage, Reine Claude de Bavay,
Jefferson, Smith's Orleans,
Lawrence's Favorite, Washington.

CHERRIES.

Belle Magnifique, Elton,
Black Eagle, Early Richmond for cooking
Black Tartarian, Graffion, or Bigarreau,
Downer's Late, Knight's Early Black,
Downton, May Duke.

APRICOTS.

Breda, Large Early, Moorpark.

NECTARINES.

Downton, Early Violet, Elruge.

PEACHES.

Bergen's Yellow, Early York, large,
Cooledge's Favorite, George IV.,
Crawford's Late, Grosse Mignonne,
Early York, *serratea*, Morris White,
Old Mixon Free.

UNDER GLASS.

GRAPES.

Black Hamburg, Chasselas de Fontainebleau,
Black Frontignan, Grizzley Frontignan,
Black Prince, White Frontignan,
White Muscat of Alexandria.

OPEN CULTURE.

Catawba, Diana, Isabella.

RASPBERRIES.

Falstolf, Knevet's Giant,
Franconia, Red Antwerp,
Yellow Antwerp.

STRAWBERRIES.

Boston Pine, Hovey's Seedling,
Large Early Scarlet.

CURRANTS.

Black Naples, Red Dutch,
May's Victoria, White Dutch,
White Grape.

GOOSEBERRIES.

Crown Bob, Iron-Monger,
Early Sulphur, Laurel,
Green Gage, Red Champagne,
Green Walnut, Warrington,
Houghton's Seedling, Woodward's White Smith.

BLACKBERRIES.

Lawton's New Rochelle.

The Black Gum on Peach Trees.

A correspondent of the Country Gentleman, throws out the following hints as to the cause of this disease:

Last year I noticed a disease which had shown itself among the peach trees in this vicinity, and which was noticed in the March number of the Cultivator. The fruit last year, wherever the trees were much affected, was entirely destroyed, while others bore but two or three here and there. At the present time the bark of some of the trees looks as if scathed by fire, and last year the trunk, (from the many exudations of the sap) presented during the warm wet days of spring, an ulcerated character. In some respects the disease resembles the black knots, which often cover the damson plum tree, and there are grounds for believeing it to be analogous, but whether caused by the same insect remains to be shown.

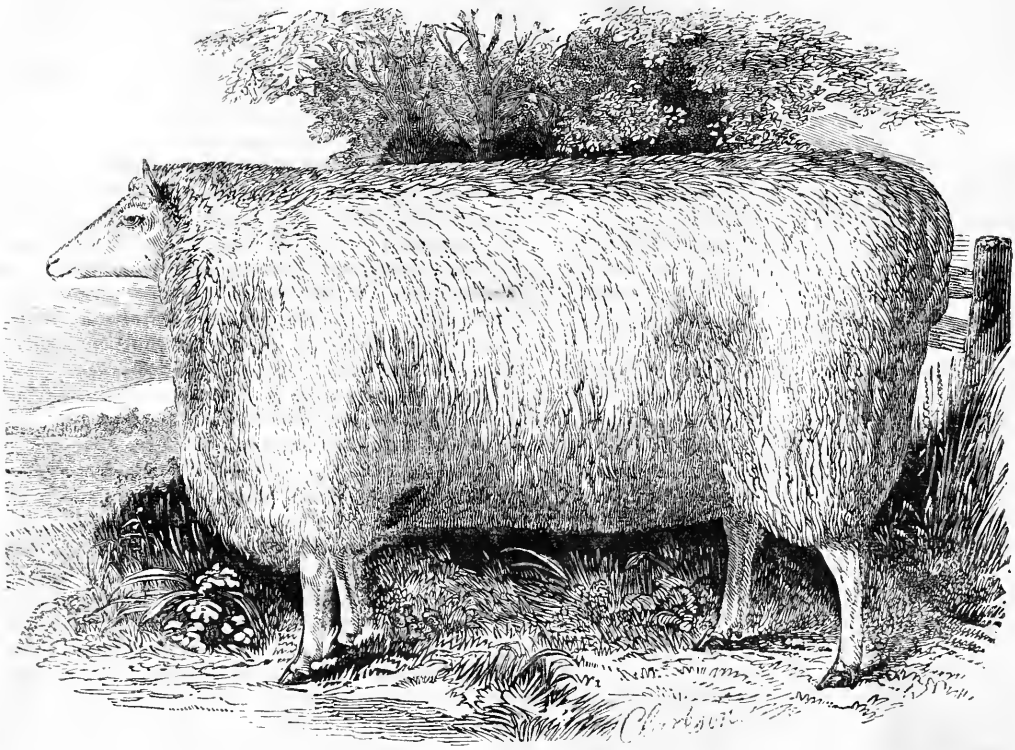
Some years ago, the Morello cherry became in all this region of country affected by the black knots, and, wherever it was not watched, covered the trees and soon left them leafless, and disgusting objects. If the disease can diffuse itself from the plum to the cherry tree, why may it not also to the peach? As a general rule, it is true, that each species of trees have insects that feed on them, peculiar to the species; but there are exceptions to the general rules, and we find the common caterpillar feeding on the leaves of the apple, pear, and cherry.

It is yet a disputed question, whether the knots on the damson plum are caused by an insect; for although the curculio eggs have been found in the knots, it is under such circumstances as would not lead us to infer, that the excresences are its work. The aspect of the interior of the knots looks as if made by insects, and these may be so minute as to escape detection by the naked eye or a common microscope. In all these fruit trees the foliage of the sap appears to be arrested by the compression of the fibres of the wood.

I have noticed that a number of gardens west of mine have a great many plum and Morello cherry trees completely covered with the black knots; and the prevailing wind is a north wester. The peach trees east and south of these gardens, as far as I have observed, with a few exceptions, exhibit the disease of the black gum; while those north and west are sound, and bore last year good

crops. Hence I would argue, that the insects are borne on the wind from tree to tree. In my own garden, I mentioned last year that some trees were diseased more than others, which I attributed to their bearing early or late fruit; but which I now think, is owing to their location with respect to the wind. I should mention the fact, that I have green and yellow fruited plum trees in the same garden, which exhibit no appearance of the knots; and an individual told me this day, that he had plum trees covered with the knots in his garden intermixed with peach trees, and yet his peach trees were sound. I do not at present see how to reconcile these facts, but further experience may show whether or not, the disease mentioned is the same with that of the purple plum.

I have tried ashes, lime, and washing the trunks with sulphate of iron with some apparent benefit, but without any radical cure.



LEICESTER EWE.

The above is a portrait of a very beautiful Leicester ewe, which, with three other ewes and two bucks of the same breed, were imported in August last by Christopher Fallon, Esq., of Philadelphia, and are now at his farm in Delaware county, a few miles from the city.

The ewe, above engraved by Clarkson, is a very beautiful specimen of the breed, large size, round barrel form, heavy in most profitable points, and with very small offal. She took the first premium at the late Pennsylvania State Fair, and also at the exhibition in Delaware county, as did also a buck lamb from her, now a year old, as the best of his age and class.

This buck lamb is for sale, and those who wish to procure stock of this valuable breed, we would recommend to visit Mr. Fallon's farm, or address his manager George Drayton, Upper Darby Post office, Delaware county, Pennsylvania. We do not at this time know of any other pure Leicester stock in this section of the State.

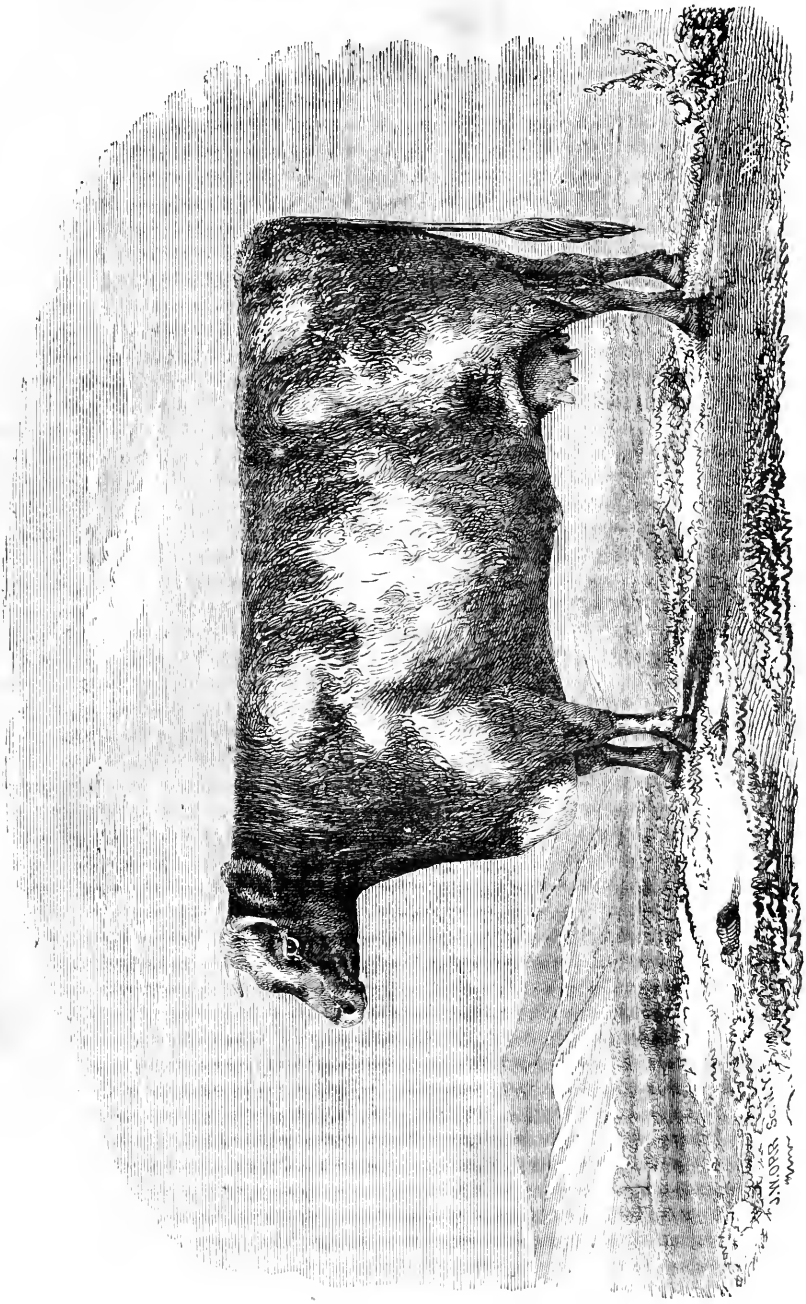
Mr. Fallon deserves great credit for his liberality and public spirit in importing improved stock.

Butter Stock.

Alexander Neave, Springdale, Ohio, states in the *Country Gentleman*, that in 1851 he made from sixteen cows, 3,137 lbs. of butter, or 196 lbs. per cow. It sold for $881,90, or $55,12, per cow. In 1852 from seventeen cows was made 3,312 lbs. butter or 195 lbs. per cow, and the butter sold for $876,57 or $51,56 per cow. This statement includes all the butter, but makes no allowance for cream and fresh milk used in a family of fourteen persons. He also states that E. R. Glen received the premium, three succesive years, of the Hamilton County Ag. Society, for the greatest quantity of butter made from one cow. She made sixteen pounds per week at each trial, and in five weeks, at one trial, eighty-one pounds. They are called of "native" breed, but were *selected.*

Short Horned Cow Lady Millicent.

The annexed is a portrait of a Short Horned cow, imported last summer by Jonathan Thorne, Esq., Thorndale, Washington Hollow, Dutchess Co., N. Y. She is a fine growthy and remarkably well developed animal and is considered one of the most valuable of Mr. Thorne's various importations. She is in calf by Lord of Brawish (10.465) and is expected to calve soon. Annexed is her pedigree. Roan, calved May 26th, 1847. Bred by F. H. Fawkes, Farnley Hall, England, the property of Samuel Thorne, Esq., of Thornedale, Washington Hollow, Dutchess co., N. Y.



SHORT HORNED COW LADY MILLICENT.

Got by Laudable, (9282.) Dam Millicent by Grouchy (6051), g. dam Fair Frances, by Sir Thomas Fairfax, g. g. dam Feldon by Young Colling (1843), g. g. g. dam Lilly by Red Bull (2838), g. g. g. g. dam Lilly by son of Hollings (2131), g. g. g. g. g. dam Lilly by Partner (2409), g. g. g. g. g. g. dam Lilly by R. Alcock's bull(19.)

Millicent is from the dam of Mr. Ambler's celebrated heifer (Miss Frances), the winner of a great many prizes in England.

We are informed by Mr. Jonathan Thorne, that he has disposed of his entire interest in his valuable stock of Short Horned cattle, South Down sheep, and Suffolk and Berkshire swine, to his son Samuel Thorne, Esq., who may at all times be found at Thorndale, Washington Hollow, Dutchess co., N. Y., where he will be happy to see all lovers of fine stock who may favor him with a visit.

Pedigrees of Devons Recently Purchased and now Owned by George Curwen, Esq., Montgomery County, Pa.

Bull.

Massassoit (247) calved October 3d, 1853, bred by C. S. Wainright, of the Meadows, Duchess county, New York, sired in England by a son of the Earl of Exeter (38), which won the first prize at the Bath and West of England Agricultural Society Show in 1854. Dam Ginerva (747) by Earl of Exeter (38), grandam "*Pretty Maid* by Proctor" (109), great grandam Beauty by Nelson (81). Massassoit won the first prize in class of imported yearlings at the New York State show in 1854.

Cows.

Cherry (581) calved in 1845, bred by Mr. R. C. Gapper, of Toronto, Canada West, sire "Billy" bred by Mr. James Davy of North Molton, Eng., dam Beauty. Billy and Beauty were imported by Mr. Gapper.

Cherry won a prize in the class of foreign stock at the New York State show in 1851.

Rose (1020) calved in October 1849, bred by Mr. R. C. Gapper, of Toronto, Canada West, sire Major (237,) grandsire imported Billy, dam Cherry (581) by Billy, grandam imported Beauty.

Ida (785) calved October 12th, 1852, bred by C. S. Wainright, sire May Boy (71), grandsire Duke of York (37), dam Rose (1020) by Major (257,) grandam Cherry (581), by imported Billy, great grandam imported "Beauty." May Boy was imported in the year 1851, from the herd of Mr. George Turner, of Baton, near Exeter, England.

We should like to obtain portraits of the above.

Corn Fodder for Cows and Subsoiling.

Our friend George Walker, of Susquehanna county, one of the best farmers of northern Pennsylvania, writes us as follows respecting the advantages of feeding cut corn fodder to his cows.

It agrees with other experiments tried elsewhere, and where the profitable results are so obvious, and within the reach of all, it is only surprising that so many farmers should continue in the wasteful habit of feeding their fodder in sheaves, and in the open yard, where not less than one half is actually lost. Stock will not masticate much but the leaves and tops, unless it is cut and crushed; that the stalks contain valuable nutriment has been fully settled, and the practice of letting them be trodden under foot for manure, is no more rational than to throw out hay for manure, without first yielding its nutriment in passing through the body of the animal. The letter says:

"Last winter I kept our cows and oxen on corn fodder, which we cut with a corn stalk cutter I procured of Wheeler, Mellich & Co., Albany, whereby we saved at least twenty tons of hay, in consequence of which we are enabled to keep this winter fifty-six head of horned cattle and five horses, being twice the number we were able to keep under the old and wasteful mode of feeding corn stalks without first being cut with a good machine.

The subsoil plow I purchased of P. Morris & Co., in Philadelphia, last spring, answers a better purpose than I had anticipated. The use of it in our land for soil will prove invaluable, draining off the surplus water in a wet season, and a dry one, enabling the roots an opportunity to penetrate into the moist pulverized earth. On two acres subsoiled and sowed with corn broadcast, at the rate of three bushels to the acre we raised five tons to the acre of very superior fodder, although last season was the dryest ever known in this section of country. Judging by comparison, without the subsoil plow, we would not have raised more than three tons to the acre, if so much."

Peeling the Basket Willow.

A correspondent of the *New England Farmer* says:

I recently witnessed the trial of a machine invented by George J. Colby, of Jonesville, Vt., for peeling the *basket willow*, which is destined to become of great importance in this country. It does the work in the most perfect manner, is operated by one horse-power, and with two men, will peel one ton per day.

It has been fully proved, within a few years, that the European Osier will thrive as well in this as in the old country, and those cultivated here are sought after by the manufacturer in preference to the imported. There are annually imported to the United States over *five million dollars* worth, besides the manufactured article, which amount is very large, all of which might be cultivated in this country to great advantage.

The only objection to the cultivation of the willow in this country, is the scarcity of labor required to peel it for market, as it must be done in the spring, during the short period that the bark will strip, and in many localities the required labor cannot be had. The estimated cost for peeling by hand is about $40 per ton. That objection is now removed by the invention of a machine for the purpose. I doubt if there is any business that will yield the husbandman as large a profit as the cultivation of the *willow*, by those who have suitable soils. It will thrive well on most of our soils, or any that are rich and moist, or what is termed good grass land; but that is best adapted which is natural to our native willow, and will yield an average of two tons per acre. The present price for the willow is 6 cents per pound, with an increasing demand, and much larger than the supply.

The best willow for cultivation of which I am acquainted is the *Salix viminalis*; it grows in this locality from eight to ten feet high, is very smooth, free from knots, and never branches. There are other varieties that are valuable for hedges, or live fences, which will yield an annual profit for Osiers.

Cure for Bots in Horses.

J. S. GOFF, of Bellefontaine, O., writes, "I herewith send you a recipe for the cure of Bots in horses. It is a very simple remedy, and I have never known it to fail,

if applied in time. With me it has never failed. Take one pint of new milk or more if you choose; add to it enough sugar or molasses to make it quite sweet—add to this from two to three table-spoonsfull of hair, taken either from the tail or mane of the horse, cut as fine as you can clip it with scissors or shears; stir the cut hair into the sweetened milk and drench the beast. Give him a strong physic an hour afterwards, and I will insure a cure—if *bots* is the disease—in ninety-nine cases out of every hundred." The proof of the pudding is in eating it.—Ed. O. Farmer.

The Value of Apples.

In some of the Eastern States, apples are extensively used for feeding and fattening stock in winter; and while we are setting out orchards in the west, it is worthy of consideration whether we may not devote a portion of our farms to this express purpose, independent of any idea of selling or eating the fruit ourselves. And this question acquires a greater importance since we have been deprived of potatoes, and are unable to find any crop, which will supply the deficiency. What every farmer needs during winter is some root or fruit, containing a large amount of water or juice, with positive nutritive qualties, afforded at a low price. Apples, when once planted, cost nothing but the gathering and the interest. They keep well, with slight trouble, during winter; properly planted, they are a very certain crop; the only thing to be decided, therefore, is, are they sufficiently nutritive to render them worth growing for the fattening of stock? Dr. Salisbury, of Albany, N. Y., has studied them with this very point in view; and we abstract the following from his report which we recommend to the careful study of every farmer:

Per centage of water and dry matter in the

	Swaar.	Tolman Sweeting.	Roxbury Russet.	Rhode Island Greening.
Water,	84.75	81.52	81.35	82.85
Dry matter,	15.25	18.48	18.65	17.15
Ash,	0.26			

Mean inorganic analysis of the composition of five varieties of apples (without carbonic acid).

Silica, (sand)	1.637
Phosphate of iron,	1.593
Phosphoric acid,	13.267
Lime, (bones)	4.199
Magnesia,	1.669
Potash,	37.510
Soda, (common salt)	24.799
Chlorine, do	2.169
Sulphuric acid,	7.229
Organic matter,	5.828

Thus the salts of the apple are, chiefly, potash, soda, bones and plaster—using the common names.

Mean analysis of the organic (or feeding matter) of the apple, compared with the same in the potato; and of 1000 parts of the "Tolman Sweeting."

		1000 parts. fresh sweeting.	100 lbs. fresh apple.	100 lbs. fresh potato.
Cellular Fibre,		33.90	3. 2	5. 8
Glutinous matter,	fattening substances	3.52	0. 1	0. 2
Fat and wax,				0. 8
Dextrine	"	28.96	3. 1	0. 8
Sugar and extract	"	99.05	8. 3	2.64
Malic acid,		2.50	0. 3	
Albumen,	flesh-forming matter,	8.97	1. 4	¼
Casein,		0.89	0.16	0.45
Water,		815.20	82.66	79. 7
Starch, (fattening)		none	none	9. 9

By comparing the composition of the apple with that of the potatoe it will be noticed. 1. That the former contains 3 per cent. more of water than the latter. 2. That the dextrine and sugar in the apple take the place of the starch, dextrine and sugar in the potato. The above principles are the main bodies in the apple and potato which go to form fat. In the aggregate amount of fat-producing products, the apple and potato do not materially differ. It would be natural, however, to infer that 50 lbs. of dextrine and sugar would, if taken into the system, be more likely to make a greater quantity of fat in a given time, or at least to make the same amount in a shorter period, than an equal weight of starch, for this reason, that the two former bodies, although nearly the same in composition with the latter, yet are physically further advanced in organization, and hence, probably, approximate nearer the constitution of fat. If this view be taken, then the apple may be regarded equally, if not more rich in fat-producing products than the potato. 3. The apple is richer in nitrogenous compounds than the potato. In albumen the apple is richer than the potato, while in casein the reverse is the case. The aggregate amount of albumen, casein and gluten, in good varieties of the apple, is more than double that of the same bodies in the potato; hence the apple may be regarded as richest in those substances which form muscle, brain, nerve, &c., and the body. The difference between sweet and sour apples appears to be, that in the first the fat-producing, and in the other muscle-forming compounds abound. A *sweet* apple is superior for a fattening or milking animal; the sour apple for one that is working. But, practically, the difference is greater than the analysis would show; the sweet apple not only contains a larger amount of unformed fat, but the acid of the sour apple tends to destroy or prevent the deposit of fat in an animal; and as is well known, sour apples will dry up a milch cow, while sweet ones add to the milk. The money value of apples, compared with potatoes, may be stated somewhat as follows: for fattening, 1000 lbs. of *sweet* apples are worth about 1050 lbs. of potatoes; for feeding to growing or working stock, 1000 lbs. of good sour apples are equivalent to 2000 lbs. of potatoes, and in practice should produce the same effect. So that, in the first case, a farmer would only be justified in paying 25 cents a bushel for apples; in the latter, he might pay 50 cents without losing. (By the word "sour" we mean any that are not *positively* "sweet.")

According to Dr. Salisbury's analysis no two varieties are exactly alike in composition or water, the proportions constantly differing. Thus, in six kinds, he found the water to vary from 79 to 86 per cent; or in other words, a person buying 100 lbs. of each, got 7 lbs. more pure water in one lot than another; and, consequently lost to that extent. It were an interesting investigation which are actually the cheapest—the small and hard, or the overgrown and soft apples. We suspect that there is as much nourishment in three-quarters of a bushel of "Rhode Island Greenings" as in a whole bushel of "Monstrous Pippins."

In conclusion, we call upon such western farmers as expect to remain on their farms, to *set out apples*. Select your orchard carefully for your own use and for sale; and then plant all over your farm, in fence corners and every vacant spot, good sweet apples; and even put them

in your fields, at 40 or 50 feet apart, and set four posts round them to prevent cattle and plows hurting them. Every tree that yields on an annual average, twenty bushels of apples, or forty bushels each alternate year, is worth $100 invested at five per cent; and by planting orchards, you are leaving a fortune to your posterity, or adding to the value of your farm if you wish to sell it.—*Farmer's Companion Detroit.*

For the Farm Journal.

Poultry Manure.

Mr. Editor:—The horticulturist cannot value too highly the droppings of poultry. For the past two or three years I have tested fully its properties, and feel satisfied that one bushel of poultry manure mixed with plaster, and used as a top dressing, is equivalent to ten bushels of stable manure put into the ground in the usual manner. It is particularly valuable for onion sets, as well as for almost every other garden vegetable. My process for its use is this—I dig and plant my seed, and in the course of a few days, or about the time I think the seed is begining to germinate, I take the manure, previously mixed with a small portion of plaster and put upon the hills or beds containing the seed. By the time the shoots come up the manure is in a proper state for working, it having decomposed by losing much of its ammonia, and I find it requires less labor to keep the ground loose than when not used, to say nothing of its effects upon vegetation, which are incalculable. The season for saving this manure is now at hand, and I feel satisfied that if once tried will never be abandoned, if the manure can be had.

I might also say in this connection that in consequence of the attacks of the striped bug upon the cucumber plant, it has become almost an impossibillity to cultivate that much admired vegetable. By the use of *air slacked lime*, sprinkled every few days over the plant, their ravages may be checked, and the horticulturist find no difficulty in raising any quantity of the vegetable. The same remedy will apply to pumpkin and squash vines. Yours, P.

Muncy, Pa., Feb. 20th, 1855.

For the Farm Journal.

Productive Fowls---Gapes.

Friend Editor:—Having recently become a subscriber to the Farm Journal, with which I am well pleased, and having seen an article in the last number headed "Profitable Hens," by Joseph A. Woodward, I thought I would give an account of our hens the past year, and leave it to you whether to publish it or throw it into the scrap bag.

On New Year's day, 1854, we had thirty hens, which were about one-fourth Shanghai, and two crowers, one of which was about one-half Shanghai, which had mixed with our common or mongrel breed. In the spring we sold eight of our hens, which left twenty-two, from which we sold 2760 eggs, and raised 145 chickens. The eggs used in our family, or set under the hens and not hatched, and the chickens lost when young, are not taken into account.

I think we are a little ahead of J. A. W., as he had thirty-five hens, which laid 2405 eggs, which included those from which the chickens were hatched, if I understand him. Our hens run at large, and were fed on corn, oats, and the screenings of wheat, and made their nests where they could find a place.

You may see that I have not got the Shanghai, Cochin China, Black Spanish, or any other imported chicken fever very badly, nor do I think I'll take it very soon. I will just add that a little pot skimmings, or salty fat, rubbed on the chicken's head, and a small portion put in their feed has effectually cured the gapes with us.

Cochranville, Chester co., Pa. D. KENT

For the Farm Journal.

Barns.

The barns of Pennsylvania are among the most convenient, as well as most durably constructed, in the Union, if not superior to any in these respects; but the question arises whether they are the "thing," as regards the feeding purposes of cattle. Every farmer who has the experience of feeding cattle must have seen them refuse the very best of hay, and ask himself the question why is this? As a matter of course, there are different notions advanced; but is it not most likely owing to the fact that fodder is generally stored immediately above the cattle, and the ammonia and other volatile matter arising from their excrements and breath is more or less absorbed by the fodder, which is afterwards refused by the cattle? I have seen them walk up to the fodder, smell at it, and leave it, or eat but very little—no more than barely enough to keep them from starving. Animals have the sense of smell more fully developed than man, having instinct instead of reason to govern their actions. I shall be happy to hear from one better qualified than myself to write on this subject. J. S. K.

Orwigsburg, Feb. 12, 1855.

For the Farm Journal.

Oregon Pea.

Mr. Editor.—The article on the Oregon Pea, in your January number, has no doubt made many of your readers anxious to give it a trial. For the benefit of such I would state that I have a small quantity of seed, which I am willing to distribute in small parcels without charge.

I planted some seed the latter part of April. The plants made a large growth, and produced an enormous quantity of pods, but very little of the seed was ripe when frost set in. My plot, however, was not adapted to its proper growth; it was a level cold clayey soil, which, with heavy spring rains, retarded the growth so much that the plants did not begin to thrive until some time in June.

If the seed was sown as early as the season permitted, in a warm sandy loam, I have no doubt but that it would have ample time to come to perfection.

CASPER HILLER.

Conestoga, Lancaster co., Pa., Feb. 12th, 1854.

Homemade Guano—How Should it be Applied?

Mr. Editor:—I have observed many communications in your valuable Journal, relative to "homemade guano," hen manure, &c., but none of your correspondents have written a word concerning the manner of applying it to the crops. Every farmer knows that poultry manure is very strong, and if applied in too large quantities will

have an injurious effect on vegetation. We have been told to make alternate layers of this manure in our poultry houses, with peat, muck, wood ashes, plaster, &c., &c. Now I will be much obliged to some one of your numerous *practical* readers, if I am informed of the best mode of applying hen manure to the corn crop. I have probably from fifty to seventy-five bushels of this manure and would like to apply it to my corn crop in the spring, and not having experimented wih it am afraid lest I may ut too much in the hill, and thereby injure the grain.

Bedford co., Pa. WM. HARTLEY.

Will some of our friends who have had experience in the matter answer the above in time for our April number? ED.

Raising Fruit and Grain from Seed, with the View of Originating New Varieties.

MR. DARLINGTON:—Sir:—With the desire of interesting some of your numerous readers in the delightful study, or employment of *originating* new varieties of grain, fruit, flowers, &c., I wish to offer a few hints through the "Journal," trusting that—should a single new variety be brought to light by means of this crude article, my labor in preparing it, will have been fully rewarded.

With the object of raising something new; fruit or grain that has not been before, we should attend to planting the seed. There is a wide field open to the "experimenter" to employ his time, in increasing the number of our enjoyments. All our superior varieties of grain, fruit and vegetables, originated from seed—*accidentally* indeed, in most cases, but by sowing any kind of grain, as for instance, take several kinds of wheat, intermix and sow it,—the produce, or first crop will not *apparently* vary from the kind sown; yet by re-sowing this *mixture*, several years in succession, and closely examing the heads at maturity, we will find some among them that differ—and by selecting and sowing the produce of these heads separately, we may produce new and distinct varieties, or a *new* kind of wheat,—then, by constantly selecting the best, and rejecting the rest, permanent varieties will be the result

Planting the seeds of Apples, Pears, Grapes, &c., and carefully raising the young seedlings until they show fruit, is a most pleasing employment for a person who has spare time to devote to such an object. In this manner, you *may* originate a new fruit of value, and those stocks, that produce inferior fruit, are not "labor lost," but are the very best to work on superior fruit by engrafting. In this way most of our choice fruits have originated, mostly, however, by *mere chance*. Almost every neighborhood has some superior apple, pear, plum, or grape, that came up accidentally in a fence-row a clearing, or some other "out of the way place,' and in all probability, was completely surrounded, and protected by a stockade of briars, and not cared for, till the fruit recommended it to especial protection and notice. Thus, many valuable fruits are added to the list by mere accident.

Personal experience induces me to urge this matter to the favorable notice of all lovers of good fruit, and particularly and especially to the young, as having a fair prospect of longer time to operate, and consequently more encouragement to test the result of experiments.

During my short career, I have succeeded in raising various fruits from seed, though none of any extraordinary merit. From the Seckle Pear, I have fruited a number of seedlings, some superior in size, but all inferior to the parent in quality; from the Choke Pear, I have a seedling of "good" quality, and should seedlings of this improve with the next or second generation, in the same ratio as the first, we might look for something worth "further trial." In planting some seeds of the Alexander grape, a blue or black variety, about one half proved to be males; the balance bore fruit of every imaginable variety, size, color, form, &c., but all except one or two, inferior to the parent; one, and the only one I retained, is a *white* or *yellow* grape, bunches small, berries medium size, in quality superior to its parent—hardy, healthy, and free from mildew, a decided acquisition.

I might enlarge on my own experiments, but prefer to refer to other experimenters. The "Hovey strawberry" is the result of raising seedlings, and is now known, and acknowledged, "the world over," almost, as standing in the first rank of that delicious fruit.—the Mc'Avoy's superior, Longworth's Prolific, Moyamensing, and many others, have been raised from seed, and are an earnest of what can be done. Then we hear of several persons, who are experimenting with the Grape, by artificially impregnating the native with some Foreign varieties—the result thus far augurs favorably. The "Houghton Seedling Gooseberry" is the offspring of native and European parentage; if we are rightly informed, the originator planted a native or wild gooseberry, and surrounded it with some of the large English varieties; thus being in close proximity, the wind, bees, and other insects, carried the pollen from one plant to the other, and thereby impregnating the seed,—this seed produced by the native plant was planted, and the young seedlings left pretty much to take care of themselves; the consequence was, that none but the most hardy could withstand such rough usage, and all the weaker and more delicate, had, of course, to "knock under" to the more hardy and thrifty plants; one of these was honored with a "habitation and a name," and is worth more in our climate, than all the European kinds put together; and although not so large as the English *prize berries*, makes up for all deficiencies in that respect by its enormous crops and healthy growth.

The "New Rochelle" or "Lawton Blackberry," now so much sought after, that plants can scarcely be raised fast enough to supply the demand, is no doubt a hybrid, accidentally produced in the same way.

We have on trial a new kind of wheat, which goes by the name of "white blue stem, with red chaff," which we consider a very superior article—it was started from a single head found in a wheat field, and considered by the person who discovered it, as something different from any thing he had ever seen; he planted the seed separately, and again planted the produce, till a sufficient quantity was had to sow a field,—it turned out well, the grain is heavy, the kernel small, round, very white, and the flour extra; the neighbors admired it, procured seed, and thus it is fast replacing some other, and less valuable kinds.

Again, we hear of a new Pea being originated by a gentleman of Virginia, which is said to be proof, against the pea bug, and it is believed when once disseminated, will prove to be a valuable variety,—he having planted a row of the common garden pea in his garden, and during their growth, found a wild pea vine coming up and intermixing with the others; on picking off the pods, he discovered one pod of a different appearance from the rest; this he secured, and planted next season; this second crop was a well developed hybrid, and for the three years that it has been planted, retains its distinctive character.

Instances might be multiplied, but enough has been said to show what has been done, and this too, mostly, by mere chance, or accidentally,—what then may we not hope for, if persons will devote their attention to the subject, and institute a regular set of experiments, with the *intention* of raising new species, or varieties of grain, fruit, vegetables

and flowers? The *honor* of being the originator of a new plant is worth something, aside from its *value* to the human race.

Then go to work at once, you who have the convenience, the leisure, and the energy, to prosecute experiments of this kind to a successful conclusion. J. B. GARBER.

Mountvill, Pa., February, 1st, 1855.

Seeds and New Plants.

MR. DARLINGTON:—Your correspondent "Agricola" in Jan. No. says "he has been trying to procure seeds," of some plants he names, "but without success." Now had he given his real name and address, I should have been pleased to have corresponded with him direct, but as he prefers to remain incog.—"asking for light, yet preferring darkness," I will, with your permission, notice some of the plants he names through the "Journal."

The *Oregon Pea*, I had on trial last year,—it is by far too late for our climate; barely coming into flower when the frost cuts them off. The *Japan Pea*, however, suits our climate, ripens early, and is far superior to the Oregon, in size productiveness, and vigor of growth; of this I have seeds for further trial, and could spare a few.

Oxalis Crenata, I had some years since, but lost it; it succeeded admirably in pot culture, producing its small tubers in profusion, yet as soon as planted out in the open ground, it would barely live through the season, without increasing to any extent. If it would succeed in out-door culture, it would be a valuable addition to our list of culinary vegetables; the tubers are far more delicious than the potatoe. The others I am unacquainted with, unless what I cultivate as the *cherry bean* should prove the same as the *chick-pea* the description answers for both. But why recommend the Pea for poultry? I doubt if Shanghai, would relish it, unless ground or cooked; at least, other grain would have to be kept out of the way for some length of time. The *Douri corn* is an excellent feed for poultry, and succeeds well; even the *Chocolate corn*, and Broom corn are greatly superior to peas in productiveness, and a good feed for small and large chickens.

In this connection, I may add a few remarks on another vegetable, which was highly recommended at the time, as a substitute for the potatoe, I allude to the *Aracacha*, of South America; this, like the Oxalis crenata, seemed to do pretty well in pot cultivation, but as soon as planted in the open ground, would barely live, making no growth in consequence.

From failing to grow to perfection any new plant or vegetable on a first trial, we ought not to be discouraged, as I well remember the Mediterranean wheat that I had on trial, some five or six years before it was brought into general notice. It was then a large, rough, dark, yet shrivelled and imperfect berry, nothing but "skin and bone," as a miller remarked at the time. I discharged it from my premises. It is now more generally distributed, and a more certain crop in *all localities*, than any other variety extant,—thus improving greatly in quality since its first introduction.

A new esculent root, recently introduced into France, and which is highly spoken of as a substitute for the Potatoe; the *Gesneria Esculenta*; this also does well in pot cultivation, increasing fast; I have not yet tried it in open culture, but fear it will not succeed. Very respectfully,

Mountville, Pa., Feb. 1st, 1855. J. B. GARBER.

Grafting and Pruning Fruit Trees.

MR. J. L. DARLINGTON:—I take this opportunity of giving my experience in the art of grafting fruit trees of different kinds, together with a few rules, to the readers of the Farm Jonrnal, which, if strictly adhered to, will enable them to be their own nurserymen, so far as raising fruit trees is concerned.

Inoculating is the operation of transplanting any particular variety of tree, to the stock of an inferior, or wild one. It is generally performed on small trees, and only during the time when the sap flows most freely, which is about July, August and September. Select for the buds the ripest and strongest young twigs of the year, which should be taken from the top of the tree, because they have all the advantage of the sun, and free circulation of air, and are more likely to be thrifty, than those from lower limbs and middle of the trees. Cut off the leaves, leaving the foot-stalks entire; having selected a smooth place in the stock, make a perpendicular slit downwards, quite through the bark, an inch or more in length; make a cross cut at the top of this slit, a little slanting downwards; next proceed to raise the bark, being careful not to injure the sap-wood in the least; then, with expedition, take off a bud, which is effected by entering the knife half an inch above or below the bud or eye, and slicing it off with the bark, always leaving a thin slip of wood, of about one third the length, immediately under the bud; the bud is to be immediately inserted in the stock, to the bottom of the slit, and between the bark and wood, and the top squared even with the cross cut; then it is to be bound above and below the bud, with either cotton, woolen yarn, or bass matting. The string is to be taken off in a few days, or whenever appearances indicate that it may girdle the trees. The following spring, as soon as the buds begin to swell, cut off the portion of stock above them, of all that have taken well, and saw the top off, and graft those missed.

Scollop budding is done, by cutting from a small stock a thin narrow scollop of wood, about an inch in length, and taking from a twig, a thin scollop of wood of the same length, containing a bud; this is applied instantly, and fitted at top and bottom, with at least one of its sides, and bound down as before directed. This can be done in the spring, and if it fails, another chance will be afforded in July or August.

Next in order is grafting,—this is performed in spring I always have found it a good rule to do it just before the buds began to swell.

Whip or Splice Grafting.—This mode is practised generally on small stocks, and is most successful when the stock and scion are of equal size; then the adjustment can be made perfectly. The scion which consists of the young wood of last year's growth, is cut to the length of about four inches, this and the stock are each to be cut sloping, an inch or more, and tongued. Tonguing consists in cutting a slit in the middle of the stock downwards, and a corresponding one, in the scion upwards; both are now to be nicely joined so that one of the sides at least, if not both, shall perfectly meet, and to be securely bound, as before, and covered with grafting wax; as soon as the stock and scion are completely united, the string is to be removed.

Cleft Grafting is performed on stocks from one to two inches in diameter. The head of the stock is sawed off, at a part free from knots, and the top pared smooth with a sharp knife; slit down the stock, through the centre, to the depth of about one and a half or two inches, and insert a wedge to keep it open for the reception of the scion, which is to be prepared in the shape of a wedge, with an eye if possible in the upper part thus formed; and always turn the eye in next to the heart of the stock; success is thus more certain The scion is now to be inserted, so that the sap-wood of the two will exactly meet.

In cleft grafting, it is best to put in two scions, and then they heal both ways, and cover the stock much sooner. When they entirely heal over, cut off the weakest, and leave the others to make the tree.

Scollop Grafting.—Prepare the stock in the form of a wedge by two sloping cuts, one on each side. The scion is prepared by splitting it upwards, and paring out the middle part to a point, both sides. When the stock and scion are of equal size, the adjustment may be made perfectly; but if unequal, one side must exactly meet; the whole is secured by a string, and covered with grafting wax. I grafted two May-Duke cherries, in this manner, six years ago last March, and now they will measure three inches in diameter t the place they were grafted; when at the time of grafting hey were about one quarter of an inch in diameter.

Root Grafting.—This operation is intended for the grape ine, just below the surface of the ground. It is performed the same as cleft grafting, except it is waxed up and the dirt replaced. It can also be performed on pieces of roots, where suitable stocks are scarce.

Side Grafting.—This mode may be practised on parts of a tree, where a limb is wanting. It may be done in two ways, first, the scion is prepared in the same manner as for splice grafting; the bark and wood, on the side of the stock is cut sloping, and the scion being adjusted as carefully as possible, it is bound and covered with wax. Second, the scion being cut sloping, as in whip grafting, a cross cut is made in the side of the tree, on the top of a perpendicular slit, the bark of the tree above the cross cut, is pared down slanting to the wood; the bark is now raised as in inoculating, and the scion inserted, bound fast, and covered with wax.

Inarching or Grafting by Approach.—This mode will apply to all such trees and shrubs, which succeed with difficulty by other modes. The tree to be grafted must be growing very near the tree that is to furnish the grafts. The limbs of each tree, to be thus united, must be pared, with a long sloping cut of several inches, nearly to their centre, and the parts thus prepared are to be brought together, and firmly secured, so that the sap-wood shall exactly meet, on at least one side, and then covered with grafting wax. When a complete union has taken place, the trees are separated with a knife, by cutting off the scion below the junction, and cutting off the stock above

Grafting Clay is made of one third part of fresh horse manure, free from litter, one third of cow manure, and one third of good clay, with a small mixture of hair well beaten and incorporated several days before using.

Grafting wax is made, three parts rosin, three parts bees wax, and one part of tallow, melted together; when well mixed, it is poured into cold water, and worked up like shoemakers wax, by hand. This wax may be melted, and spread with a brush on strong brown paper, and cut into strips of a suitable size, when it may be quickly applied. In cool weather it may be warmed by the breath, so as to become adhesive.

Grafting Wrappers can be made by cutting thin gum-elastic into strips of a suitable size, which are easily applied, and answer a very good purpose; they keep out wet and air, and can be taken off and used again.

Pruning.—If the branches of a young tree, issuing at, and above the requisite height, be made by pruning to strike out from the main stem in every direction, above the horizontal, and the interior of these be carefully kept from interfering with each other, for a few years, little or no pruning will ever afterwards be needed. I have reference to orchards of the apple, peach, pear, plum and cherry. It is not necessary to lay open, and expose all parts of the trees to the direct rays of the sun, the atmosphere being sufficient of itself to ripen the fruit. Heavy pruning should be avoided as much as possible, but when in the case of grafting or heading down for a new growth, it becomes necessary, it should always be performed between the time the frost is coming out of the ground in the spring, and the opening of the leaf. The most suitable time for moderate pruning, which is needed *every* year, is about the 21st of June; wounds, of all kinds, heal over then much quicker and better, the wood remaining sound and bright. I have even debarked a young apple tree at this time, that renewed its bark in three or four days.

The above are the principal rules, that I have adopted in the grafting and propagating of fruit trees, for the last seven or eight years, and I have found, that they were attended with good success; and so will any, and all your readers, if they will pick up the resolution to try. If he fails once, let him try again, let him kill all the natural fruit trees on his place in the attempt, rather than not have them grafted with some desirable varieties.

Before I close this communication, I must drop a hint about transplanting. When trees are removed, for the purpose of being finally transplanted, their roots should be preserved, fresh and entire. If this has not been done, their tops must be shortened in proportion to the loss their roots have sustained. October, November, and immediately after the first hard frosts have arrested vegetation, is the best time in the whole year for transplanting trees. (I am well aware, that this theory is contrary, to the general opinion, but my observation is, that a tree planted in the spring, will stand until the first of May or June, before it comes into leaf, and then grow but feebly the rest of the season.) But when trees are transplanted in the fall, the earth becomes consolidated at their roots, and they are ready to vegetate with the first opening of spring. I have seen men plant, or more properly speaking, cram trees into a hole the size of a half peck measure, wind up the roots into a lump, tramp the dirt on them, and then wonder that they would not grow.

The holes for receiving the trees should be dug from four to six feet in diameter, according to the size of the tree, and eighteen inches deep; the subsoil should be thrown out, and replaced with rich soil, with a mixture of manure; the tree should be set no deeper than it stood before, otherwise the roots will be farther from the surface than nature designed them, and consequently will be injured by it. The fibres should be spread in a lateral direction, and the soil intimately and compactly placed about them. Manure may be placed beneath, above and on all sides, but ought never to be allowed to come in contact with the roots, as it is liable to corrupt and injure them; finish by treading the ground hard. When evergreen trees are planted, it is generally a good rule to pour a few gallons of water around the tree, previous to treading hard the earth; finish earthing, and tread hard, in about an hour afterwards. This is an excellent and safe mode with regard to any tree.

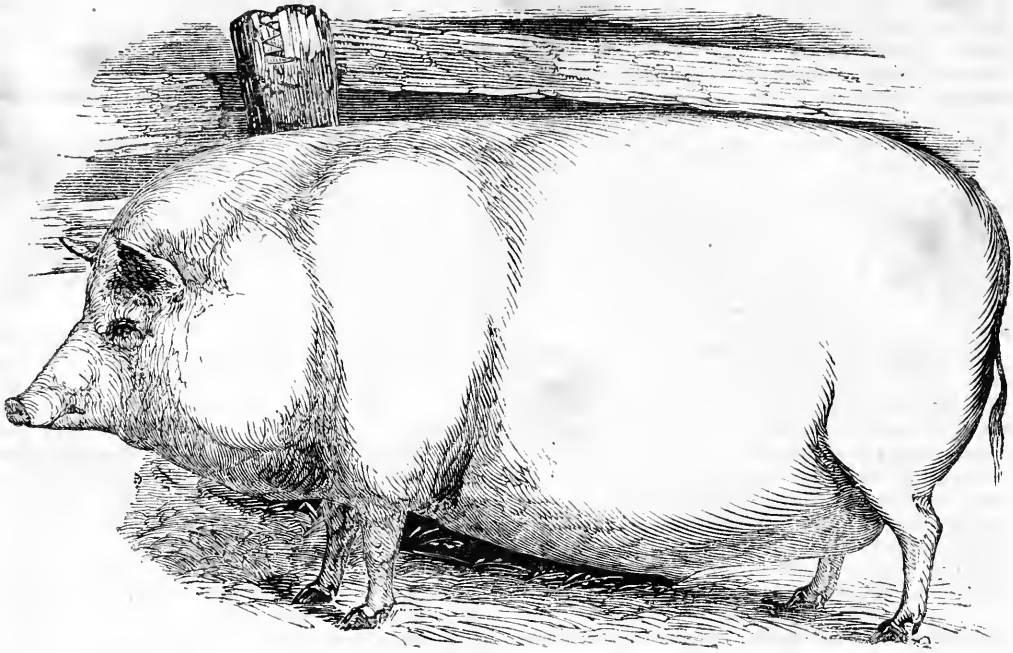
HOWARD WILLIAMSON

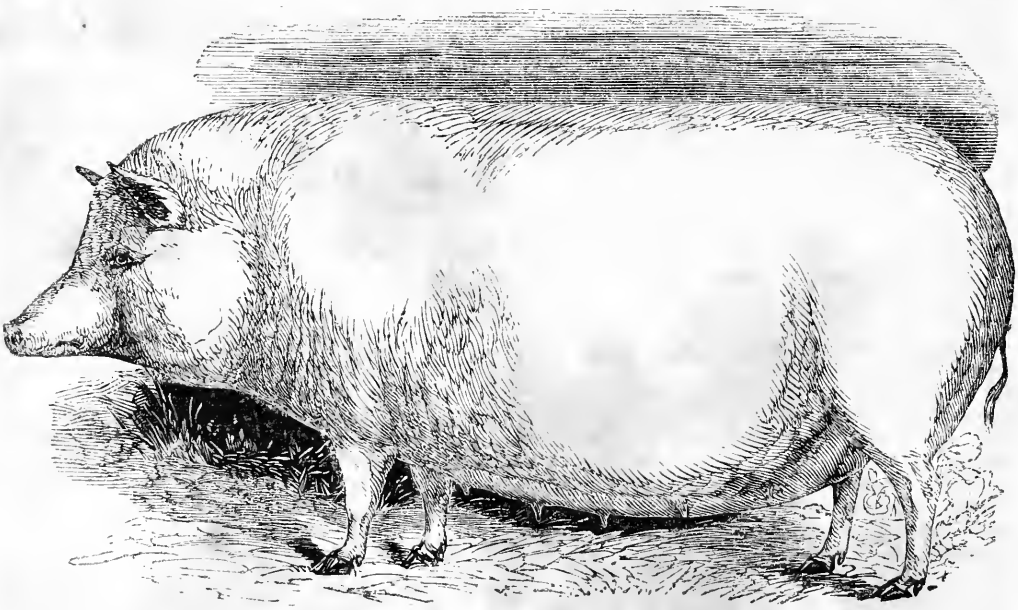
Willistown, Chester Co., Pa., Feb. 2nd 1855.

Information Wanted.

J. L. Darlington:—Dear Sir:—Allow me to inquire if you have been placed in possesion of any means to prevent cows from calving prematurely, as I have lost fifteen calves within the last twelve months in that way. I noticed, the last two years, that my calves were very feeble, when they were dropped. I have the water forced into my barnyard through leaden pipes, whether that is the cause, or some other disease, I can not account for; if you or any of your correspondents, know any thing that would prevent them, in this way, I would be greatly obliged if you could communicate it through the Farm Journal. J. B.

Our correspondent will find the information desired in the Farm Journal, volume 2d, page 273.—Ed.





SUFFOLK SWINE.

MESSRS. EDITORS:—As an answer to numerous inquiries in relation to Suffolk swine, as to their form, tendency to fatten, weight, &c., I send you a cut of a pair of Suffolks, three years old, taken from life by E. Clarkson, of Philadelphia, that were awarded the first premium by the Bucks County Agricultural Society in 1852. in '53, and '54. also the first premium of ten dollars each at the Pennsylvania State Fair, held at Philadelphia, in September last. The barrow is represented as being moderately fattened, having been fed between seven and eight weeks, and at the expiration of the eight weeks was slaughtered and his weight was as follows:

Live weight, - - - -	582½
Dressed weight including loose fat, &c.,	527
Loss, - - - - -	55½

or less than ten pounds to the hundred.

The sow is represented in breeding condition, having raised the past season twenty-one pigs at two litters

a part of which were exhibited with her at the Pennsylvania State Fair, and also carried off the highest premiums in their grade.

The above were bred by L. G. Morris, Esq., of Mount Fordham, New York, from his imported boar Radner.

Yours truly ADRIAN CORNELL.

Near Newtown, Bucks co., Pa.

Riverside Agricultural Society.

An election for officers of this Society was held on Thursday week, at Col. Herr's Hotel, in Columbia, Lancaster county, Pa., when the following named persons were unanimously elected:

PRESIDENT—Col. Samuel Shoch.

VICE PRESIDENTS—John Griffin, Jacob B. Garber, John Nissley, Joseph Detwiler, Sr.

CORRESPONDING SECRETARY—Prof. S. S. Haldeman.

RECORDING SECRETARY—P. F. Fry.

TREASURER—Wm. Mathiot.

LIBRARIAN—Samuel Evans.

MANAGERS—Dr. Amos K. Rohrer, Jacob Hinkle, Abraham Shoch, Cyrus H. Jacobs, Jacob B. Shuman, J. Houston Mifflin, John P. Stehman, John H. Hersey, Dr. Edwin Haldman.

Officers of the Tioga Agricultural Society for 1855.

PRESIDENT—W. B. Clymer.

VICE PRESIDENTS—D. L. Sherwood, B. C. Wickham, George McLeod, Ira Buckley, J. S. Kingsburry.

CORRESPONDING SECRETARY—P. E. Smith, Tioga.

RECORDING SECRETARY—G. D. Smith.

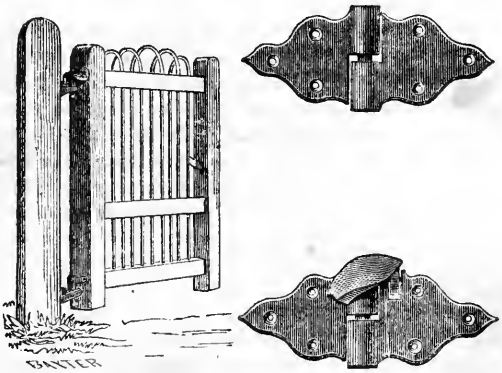
TREASURER—John T. Donaldson.

EXECUTIVE COMMITTEE—Hon. R. G. White, Nelson Whitney, A. E. Niles, D. S. Shove, H. M. Gerrald, C. H. House, L. Copeley, M. S. Baldwin, H. W. Calkins, F. J. Soper, L. D. Seely, D. Ellis, John W. Guernsey, E. T. Bently, W. B. Metcalf, Jos. Ribberrle, Henry Sherwood, Chester Robinson, John Dickenson, Robert Campbell, R. Joles, H. V. Elliott, John V. Swan, James Leonard.

Scott's Little Giant Corn and Cob Mill.

We had an opportunity within a few days past of witnessing the operation of this mill, of which we are informed over two thousand were sold during the past season. It crushed and ground corn and cobs with more rapidity than any other portable mill we have seen, and quite fine enough too for feeding purposes. We are induced to believe it a valuable acquisition to the farmer. The *economy* of grinding up cobs with the corn is hardly now an open question. Full experiments have been made, and the results frequently published. It is not pretended that cobs are *rich* in the elements of nutrition, compared with the grain, but they have been found to yield spirit on distillation—a proof that they are far from valueless,—and also answer admirably the purpose of procuring the necessary distension of the stomach, and promoting digestion. H. Ellsworth asserted some years ago he had fattened hogs on cob meal alone, and most of our best feeders have now adopted the practice of grinding corn and cobs together for fattening cattle. "The Little Giant" is of three sizes, costing respectively $44, $55 and $66. The first will grind with one horse eight to ten bushels of corn and cob meal per hour; the second or medium size, ten to fifteen bushels; and the largest size requiring two horses from fifteen to twenty bushels per hour. Estimating the usual toll for grinding of one-eighth, the time lost in going to mill at a season when the roads are generally in their worst condition, the inconvenience to the horses, and the fact that trips have to be made frequently, as a large quantity of corn and cob meal together will soon heat and spoil, we think the Little Giant Corn Grinder is well worthy of a trial. It can be graduated to grind either fine or coarse, as may be required.

SELF CLOSING GATE AND DOOR HINGES.



The above engraving represents a new article of hinges for gates and doors, which will cause them when open to close gently of their own accord, and without the gate or door being thrown out of a perpendicular position. These hinges, we can assure our readers, are no humbug. They are made by Messrs. Woolman & Coffin, No. 52 North Fourth Street. Samples have been left at this office, where they can be inspected by farmers. For further information apply to the manufacturers as above. Fastenings of new and simple construction, not liable to get out of order, may be had with or without the hinges.

Stapleton's Fat Chester County Steer.

This fine animal was slaughtered in Philadelphia about two weeks ago, and proved to be the heaviest ever killed in the city, except one, the Berks county steer, some few years ago, which weighed over 2300.

The present steer was fed by Mr. Stapleton, of Willistown, Chester county, and purchased of him by Messrs. A. R. Paul & John Jones, two of our most respectable and enterprising victuallers. We understand they gave for him, and a three year old steer, the sum of one thousand dollars. The large one weighed nett 2054 pounds, and had in him 265 pounds rough fat. He is said to be the *fattest* steer ever killed in Pennsylvania. We regret not having yet obtained his measurement, girth, length, width over the hips, &c., but hope to have it for our next number. The dimensions of so fine an animal should be preserved for future reference.

The small steer, three years old, purchased with the

other, proved only *small by comparison*, as he reached the extraordinary weight for his age of 1220 pounds. His history is no less extraordinary than his weight, and speaks a whole volume of instruction to feeders as to the importance of good, vigorous keep from the start. He was what might be called a foundling. A drover passing along with a drove of cows had one that dropped a calf; as it was unable to travel he threw it over the fence, where it was picked up by Mr. Stapleton's son, put to another cow, and otherwise well cared for. This attention and care was no doubt continued throughout. We have often observed, when boys have had animals given to them to bring up, and no restriction about access to a good meal chest, they somehow or other have grown larger and done better than the rest of the stock. It was so with this steer, and it suggests a good practical hint to farmers generally.

Mr. Paul adverted to another very important fact illustrated by these fine cattle, in the heavy loss sustained by feeders in undertaking to fatten too many head, instead of concentrating their efforts on a smaller number; in other words, obtain a given amount of *weight*, with *fewer mouths to feed*. If a farmer can make four steers weigh 4000 pounds, he will be greatly the gainer rather than getting the 4000 pounds from six steers. His additional profit will be just the difference in cost between raising four and raising six, the latter also being at an increase of risk. The principle also applies to a small and a large quantity of land—the true rule being, keep a few cattle, and keep them well, rather than many cattle, and only moderate keep—small farms well tilled and manured rather than many acres half cultivated. Napoleon owed his success to concentrating his efforts on a given point, and every farmer, as well as other business man, must succeed on the same principle.

In addition to the splendid display of beef from these two steers, which graced a couple of stalls in our Philadelphia market, always celebrated in this respect, John Jones also exposed for sale at the same time beef from the large steer which took the first premium at our late State Fair. He purchased him from Mr. Palmer, of Delaware county, by whom he was fed and exhibited. His nett weight was 1520 pounds. It is a matter of regret he was not kept for another year, as he had the frame for filling up a much greater weight, and was evidently not mature.

Lolium Perenne---Perennial Rye Grass.

The accounts we hear from different sections of country as to the merits of this grass induce us again to call attention to it, and we believe, both from what we have seen and heard, it is going to form a valuable addition to our pasture and mowing fields. We would greatly prefer it ourselves for seeding with clover to timothy. It has several very important recommendations. It is a *rapid* grower, is perennial, is well furnished with radical leaves, stock are particularly fond of it either for hay or pasture, it will bear easily two good cuttings, and keeps green to a later period in the fall than most other species.

We have known cattle to leave all other kinds of pasture when they had access to the rye grass, and one of our friends, who has several acres of it in a most luxuriant condition, informs us that in some parts of England, he has known the hay from it to be reserved especially for choice feed to the carriage horses. The most extensive cultivators of it, that we know of, are the Messrs. Reybold, of Delaware. In the second volume of the Farm Journal, page 356, one of them in answer to an enquiry says: "it will afford more feed than any other kind of grass, and its fattening qualities are equal to the best natural green grass." "One peck is sufficient to the acre if sown with clover, or two pecks if sown alone." "Cattle, sheep and horses prefer it either for pasture or hay to timothy."

A late number of the American Agriculturist says that "ray and rye grass are entirely different grasses, and should not be confounded with each other." We consider them synonymous terms, applicable to one kind of grass, and they are thus *generally* used; the latter, however, being the more proper term. It further says, "rye grass is not equal to American orchard grass." *Our* experience in the latter is, that it is more worthless than any other grass for either hay or pasture, and unfortunately like many other evil things, it is also hard to get rid of. The rye grass on the contrary is eaten with avidity, and is highly nutritious. Where our neighbor received his impressions we do not know, for Donaldson, one of the best English authorities and latest writers on grasses, says, "Rye grass is regarded in England as not far removed from being the *first* in point of general utility, and forms the plant of all others best suited for general purposes. For a crop of hay along with clovers, no other grass will afford an *equal* quantity and quality of produce on all the different variety of soils on which they are sown. It yields very readily, and with much less comparative trouble, an abundance of sound healthy seed, and of certain growth; it rises early in the spring, and is much relished by all kinds of stock; the hay is good and fetches a high price, and it is used with much advantage when sown in autumn along with other plants as spring feed for sheep." Donaldson also says, "It produces *stems* during the whole season, while some grasses produce only one."

We have sometimes, but very rarely, heard a similar opinion about rye grass to that of the American Agriculturist, but it is far overbalanced by other favorable testimony from those who have tried it. It probably succeeds best on strong land, developing most in such circumstances its peculiar and valuable tendency to throw up stems and radical leaves in profusion.

Loudon says, "After all the experiments that have been made on the other grasses, none have been found to equal the perennial rye grass for a course of mowing and pasturing for two, three or seven years. It is sown in Italy, and especially in Lombardy, and also in France and Germany, along with clover, for the same purposes as in England." Von Thaer remarks, "Though some have tried other species, both in these countries and in England, they have in the end returned to rye grass." Such highly favorable testimony from abroad is fully corroborated by the experience of our best farmers here, and we only wonder that it is not more generally known. Seed can be obtained at nearly all the seed stores in our principal cities.

The Lolium Perenne has a fibrous root with culm, normally about twenty inches high, spikelets beardless, and longer than the glumes. There are at least seven distinct varieties of rye grass, which have received botanical designations, but their peculiar characters possess more interest for the botanist than farmer, such as L. P. tenue found in dry impoverished land, L. P. humile only six or seven inches high, L. P. ramosum or branchy, L. P. paniculatum, multiflorum, monstrosum, viviparum, &c. There are also several kinds named after the persons who discovered and brought them into notice, varying somewhat in their characters and advantages for particular localities, among these are Whitworth's rye grass, introduced in 1823. He had sixty varieties growing for experiment. Also Pacy's rye grass, which Sinclair regarded as the best of all, having numerous and large root-leaves, long cauline leaves, with shorter spikelets and fewer seeds than most others, and well adapted for pleasure grounds and permanent pastures. Then there is also Russell's rye grass, Stickney's, and several others.

The Italian rye grass, Lolium Italicum, is regarded by some as a wide variety, and by others as a separate species of the common rye grass. It always has an awn or beard on its lower paleæ. English authorities say, "It has eminent adaptation to the production of only one year of grass, yet when cut down before flowering is often of several years duration. It is better being grown alone than in mixture with clover, lucerne or other herbage plants, growing so rapidly as to be liable to choke them."

Our own impression is, the grass we have been speaking of, as generally grown in the United States under the name of rye grass, is the Lolium Perenne, or English perennial rye grass, which grows wild in the grass lands of Great Britain, and *not* the Italian rye grass, Lolium Italicum, which it is often called. The latter having the striking peculiarity of being always awned, would give a ready means of identification.

Any additional information about rye grass from either our scientific or practical friends, will be received with pleasure.

The Pennsylvania Farm Journal.

"We have been in the habit of speaking of this paper as one of the best in the country, but for some time past it seems to have become the special champion of certain gentlemen in whom we certainly have little confidence. We half suspect that the *Journal* has connected itself with some agricultural warehouse, and that this is the cause of its change of tone and character. We shall be glad to have these suspicions removed."

We clip the above from the "Country Gentleman" of January 18th, and should have noticed it last month had not the paper failed to reach us in regular course of mail.

We are not aware of having "recently become the special champion of certain gentlemen" or even the champion of *any* gentlemen whatever; and as for becoming connected with some agricultural warehouse, we can inform our friend Tucker that the *very reverse* is the case. Mr. Darlington, the editor, and one of the *two* proprietors of the Farm Journal, was formely a member of the firm of Paschall Morris & Co., who, as is well known, had a large agricultural warehouse in this city, and another in West Chester. The former is still owned by the firm of Paschall Morris & Co., the latter by D. W. Entriken—Mr. Darlington having no interest in either.

We can assure our friend of the Country Gentleman, that neither mercenary expectations or personal spleen will be permitted to control the course of the Farm Journal. Our desire is to impart *reliable* information on subjects of practical interest to the farmers of this and adjoining States, regardless alike of the effect such information may have upon the interest of any manufacturer or vendor of any article in the market.

A Pleasing Compliment.

In our last number we copied from the Harrisburg correspondence of the North American, a brief notice of the presentation of plate to Robert C. Walker, Esq., Secretary of the Pennsylvania State Agricultural Society. Since then a friend and correspondent has kindly furnished us with the following abstract of the proceedings:

Our correspondent says: "The presentation took place at Harrisburg on the evening of the 15th ult., in the large drawing room of Mrs. Espy's boarding house. The company present on the occasion was highly respectable, and embraced the names of several distinguished characters, among whom were the Rev. H. H. Bean, Rector of the Episcopal Church, Hon. Wm. M. Hiester, Speaker of the Senate, Senators Eli K. Price and N. B. Browne from Philadelphia, Senators Darsie from Allegheny, and Flenniken from Green, and some members of the House of Representative, with citizens of Harrisburg, including a few members of the press, and last not least, a goodly array of ladies, whose presence and sparkling eyes gave additional brilliancy to the highly polished silver tea set; for what "tea things," however artistically burnished, but would appear dull and leaden without they reflected the genial light of the presiding deities of the tea table. After the presentation the company partook of a cold collation, a blessing being first invoked by the Rev. Mr. Bean. The refreshments were prepared on short notice by Mrs. Espy, and were both choice and appropriate, and in good taste, like every thing that Mrs. Espy does. The evening passed off delightfully, indeed profitably, and will be long remembered by every one who like myself had the pleasure of sharing in its rational enjoyments."

Remarks of Mr. James Gowen.—Mr. Walker:—Since my arrival in Harrisburg, I have received a letter from a gentleman in Philadelphia, who, at the instance of several of your agricultural friends in that city, requests me to present to you a Silver Tea Set, the same now before me, which it appears has been sent hither for that purpose.

I could wish, sir, that the contributors to this beautiful testimonial, had deputed some one more competent than myself, to represent them on the occasion. Yet, notwithstanding the suddenness of the call made upon me, and unprepared as I am to acquit myself as I could desire, the pleasure I feel in being the medium between you and them in a matter so interesting to me, renders the task a pleasing duty—because I am so sensible of the merits of the recipient, and the pure and disinterested motives of the donors.

This testimonial was not elicited through political partizanship, nor is it offered by those, who *to-day* would applaud

you to the echo, and *to-morrow*, however faithful to the dictates of conscience, might attempt to bury you in the depths of obscurity. Nor was it snatched from the unholy fires of fanaticism or faction, whose false glare might for a time emblazon, but in the end would be sure to consume and victimize you. Nor was it won on the tented field, a bloody trophy, to deck your victor brow.

No, sir, none of these. This testimonial was earned by you, in the peaceful, unpretending field of agriculture; it is a sheaf most worthily reaped from a harvest, the seed of which you most faithfully sowed. It is a tribute from the friends of agriculture in Philadelphia, who witnessed your unsurpassed exertions in conducting the late exhibition at Powelton—an exhibition that did credit, I might say honor, to the State, and enriched the treasury of the State Agricultural Society.

Without further preface I shall refer to the inscription on these beautiful articles, illustrated by devices emblematic of *Agriculture*, *Horticulture*, and *Industry*, richly chased and of exquisite finish, reflecting credit upon the taste and skill of the artificer. It reads: "Presented to Robert C. Walker, Esq., Secretary of the State Agricultural Society, by the friends of Agriculture in Philadelphia, as a token of their high appreciation of his devotedness and zeal in promoting the interests of Agriculture, and of his gentlemanly deportment, during their intercourse with him, pending the great Agricultural exhibition at Powelton, September, 1854."

This, sir, with the emblems, is sufficiently indicative of the merits and motives of you and your agricultural friends. Receive, then, this splendid Silver Tea Set, and long may you live, in peace and prosperity, to enjoy them in your family circle; and at length, when your days shall be closed, may the name I am sure you will transmit to your children be cherished and preserved unsullied by them; and may these memorials, under the guidance of Divine Providence, tend to inspire them to follow in the footsteps of their honored father.

MR. WALKER'S REPLY:—Sir:—In preforming the duty imposed upon you by citizens of Philadelphia, to make a formal presentation of this flattering token of their esteem and friendship, you have kindled emotions of thankfulness and gratitude not easily expressed. I am sure, however, that I fully appreciate this valuable testimonial, coming as it does, from the friends of Agriculture as a reward for my attention to the cause they wish to promote. It is, indeed, more highly prized than if it were a memento to record some political party ascendancy, or some heroic deed upon the battle-field.

In accepting, gratefully as I do, this beautiful gift you have offered on behalf of the friends of Agriculture in Philadelphia, I would ask you to tender them my sincere thanks for their disinterested kindness, and assure them, I cherish the hope, that this testimonial may never be dismembered from the family circle, which it will grace by its usefulness and beauty, and that *there* it will ever be consecrated to the memory of the donors. In according my deep indebtedness to those whom you represent, I must not forget my obligation to you, sir, for the kind manner in which you have discharged your duty. And when I reflect that you are a distinguished farmer of the practical school, and that Mount Airy, your residence, has become celebrated by your improved husbandry, the compliment is the more to be appreciated and the favor the more highly esteemed.

If you want to ascertain whether a soil or substance contains lime, you may pour upon it a small quantity of vinegar, or dilute muriatic acid. If lime is present, the mixture will froth up or effervesce.—*Dr. Kent.*

Act of Incorporation of the Farmers' High School of Pennsylvania.

SECTION 1. Be it enacted by the Senate and House of Representatives of the Commonwealth of Pennsylvania in General Assembly met, and it is hereby enacted by the authority of the same, that there be, and is hereby erected, and established at the place which shall be designated by the authority, and as hereinafter provided, an institution for the education of youth in the various branches of science, learning and practical agriculture, as they are connected with each other, by the name, style and title of the Farmers' High School of Pennsylvania.

SECTION 2. That the said institution shall be under the management and government of a board of trustees, of whom there shall be thirteen, and seven of whom shall be a quorum, competent to perfom the duties hereafter authorized and required.

SECTION 3. That the Governor, Secretary of the Commonwealth, the President of the Pennsylvania State Agricultural Society, and the principal of the Institution, shall each be ex-officio a member of the board of trustees, and they with Doctor Alfred L. Elwyn and Algeron S. Roberts of the city of Philadelphia, H. N. M'Allister of the county of Centre, R. C. Walker of the county of Allegheny, James Miles of the county of Erie, John Strohm of the county of Lancaster, A. O. Hiester of the county of Dauphin, William Jessup of the county of Susquehanna, and Frederick Watts of the county of Cumberland, shall constitute the first board of trustees, which said trustees and their successors in office, are hereby erected and declared to be a body politic and corporate in law with perpetual succession, by the name, style and title, of the Farmers' High School of Pennsylvania, by which name and title, the said trustees and their successors shall be able and capable in law, to take by gift, grant, sale or conveyance, by bequest, devise or otherwise, any estate in any lands, tenements and hereditaments, goods, chattels or effects, and at pleasure to alien or otherwise, dispose of the same to, and for the uses and purposes of the said institution; *provided, however*, that the annual income of the said estates so held shall at no time exceed twenty-five thousand dollars; and the said corporation shall, by the same name, have power to sue and be sued, and generally to do and transact all and every business touching or concerning the premises, or which shall be necessarily incidental thereto, and to hold, enjoy, and exercise all such powers, authorities and jurisdiction as are customary in the colleges within this Commonwealth.

SECTION 4. That the same trustees shall cause to be made a seal, with such devices as they may think proper, and by and with, which all the deeds, diplomas, certificates and acts of the institution shall be authenticated, and they may at their pleasure alter the same.

SECTION 5. That at the first meeting of the board of trustees the nine named who are not ex-officio members, shall by themselves and by lot, be divided into three classes of three, each numbered, one, two and three; the appointment hereby made of class number one, shall terminate on the first Monday of October, one thousand eight hundred and fifty-six, number two on the first Monday of October, one thousand eight hundred and fifty-seven, and number three on the first Monday of October, one thousand eight hundred and fifty-eight; and upon the termination of the office of such directors, to wit, on the first Monday of October in every year, an election shall be held at the institution to supply their place, and such election shall be determined by the votes of the members of the executive committee of the Pennsylvania State Agricultural Society, and the votes of three representatives duly chosen by each county agricultu-

ral society in this Commonwealth, which shall have been organized at least three months preceding the time of election; and it shall be the duty of the said board of trustees, to appoint two of their number as judges, to hold the said election, to receive and count the votes, and return the same to the board of trustees, with their certificate of the number of votes cast, and for whom; whereupon the said board shall determine who have received the highest number of votes and who are thereby elected.

SECTION 6. That on the second Thursday of June, after the passage of this act, the board of trustees who are hereby appointed, shall meet at Harrisburg, and proceed to the organization of the institution and selection of the most eligible site within the Commonwealth of Pennsylvania for its location, where they shall purchase or obtain by will, grant or otherwise, a tract of land containing at least two hundred and not exceeding two thousand acres, upon which they shall procure such improvements and alterations to be made, as will make it an institution properly adapted to the instruction of youth in the art of farming, according to the meaning and design of this act; they shall select and choose a principal for the said institution, who, with such scientific attainments and capacity to teach as the board shall deem necessary, shall be a good practical farmer; he, with such other persons as shall from time to time be employed as teachers, shall compose the faculty, under whose control the immediate management of the institution and the instruction of all the youth committed to its care shall be; subject, however, to the revision and all orders of the board of trustees; there shall be a quarterly meeting of the board of trustees at the institution, and as much oftener as shall be necessary, and they shall determine; the board shall have power to pass all such by-laws, ordinances and rules, as the good government of the institution shall require, and therein to prescribe what shall be taught to, and what labor performed by the pupils, and generally to do and perform all such administrative acts as are usually performed by and within the appropiate duty of a board of trustees, and shall, by a secretary of their appointment, keep a minute of the proceedings and action of the board.

SECTION 7. That it shall be the duty of the board of trustees, as soon and as often as the exigencies of the institution shall require, in addition to the principal, to employ such other professors, teachers or tutors, as shall be qualified to impart to pupils under their charge, a knowledge of the English language, grammar, geography, history, mathematics, chemistry, and such other branches of the natural and exact sciences as will conduce to the proper education of a farmer; the pupils shall themselves, at such proper times and seasons as shall be prescribed by the board of trustees, perform all the labor necessary in the cultivation of the farm, and shall thus be instructed and taught all things necessary to be known by a farmer, it being the design and intention of this law to establish an institution in which youth may be so educated as to fit them for the occupation of a farmer.

SECTION 8. That the board of trustees shall annually elect a treasurer, who shall receive and disburse the funds of the institution and perform such other duties as shall be required of him, and from whom they shall take such security for the faithful performance of his duty as necessity shall require; and it shall be the duty of the said board of trustees annually on, or before the first of December, to make out a full and detailed account of the operations of the institution for the preceding year, and an account of all its receipts and disbursements, and report the same to the Pennsylvania State Agricultural Society, who shall embody said report in the annual report, which, by existing laws, the said society is bound to make and transmit to the Legislature on, or before the first Monday of January of each and every year.

SECTION 9. That it shall be lawful for the Pennsylvania State Agricultural Society to appropriate out of its funds to the object of this act, any sum not exceeding ten thousand dollars, whenever the same shall be required, and to make such further appropriation annually out of their funds as will aid in the prosecution of this object, and it shall be the duty and privilege of the said society, at such times as they shall deem expedient, by their committees, officers or otherwise, to visit the said institution and examine into the details of its management.

SECTION 10. That the act to incorporate the Farmers' High School of Pennsylvania, approved the thirteenth day of April, Anno Domini, one thousand eight hundred and fifty four, be, and the same is hereby repealed.

Cutting Briars and Bushes.

MR. DARLINGTON:—Enclosed I send you one dollar—another year's subscription for the Farm Journal. I will also take this opportunity of requesting you to enquire through your Journal, whether any of your subscribers have experimented on the cutting of *briars* and *bushes* in the dark of the August moon and sign of the *lion*. I believe it was suggested by a correspondent a couple of years ago, when the subject was spiritedly discussed by both male and female writers, through your Journal, and it was proposed to settle the matter by actual experiment. I have been waiting patiently to hear the result, but nothing has appeared yet, that I have seen. I think time enough has elapsed to show something. It is true that each one might experiment for himself, but the affirmative of these questions has been held by many old and experienced persons, as has also the negative, and I hope they have not ended in loud talk and nothing more. A number, certainly, have been making trials, and if we wish to have these questions decided in a true philosophic manner, as they should be, let us have the results of any experiments made on them. I felt quite interested in the contest when it was going on, and I should like much to learn the results. If the affirmative is true, practicing accordingly would be of very great advantage to the community; if not true, then we could go on with our work without any doubts that we might be doing it in wrong season. At the time recommended I cut several patches of blackberry, sumac and other bushes. I have observed that some did not grow at all, and that those that did have not made much progress, but appear to be rather sickly—whether the cause is the time of cutting, or the very dry summers that we have had, or both, I do not know.

Will you please endeavor to keep us posted up as to the advantages of the system of subsoiling? If it is of any advantage, I should suppose that it would speak a plain tale this last summer; if of no marked benefit, those of us who are not yet into it had better of course remain where we are. Yours, HUGH HAMILTON.

Carter Hill P. O., Erie county, Pa.

The above was intended for our February number, but was crowded out at a late hour. We confess we have no belief in the *signs of the moon*, but have great faith in the efficacy of the season—the hottest and dryest period of summer for preventing bushes, &c., sprouting after cutting. —ED.

For the Farm Journal.

Mowing Machines and Lime Spreaders.

MR. J. L. DARLINGTON, Esq.:—As we are often invited to write for *our* paper, and give our experience in various branches of farm business, particularly experiments with

newly invented agricultural implements, although a little out of season, I wish to say something about Allen's mowing machine. This I am induced to do on account of your correspondent from Honeybrook,(P. Dampman) giving such a glowing description of the performance of Allen's mower, made by Lee, Peirce & Thompson. He says in October No. of the Journal, that he used one last harvest, which cut better than can be done with the scythe; that he cut from eight to ten acres per day, and if it was pushed a little it would go fifteen; that it had no side-draft, and is about as hard for the team as plowing stubble ground; and the *hundreds* who came to see it were all pleased, and found no fault with its performance, &c., &c.

Now, had I not already owned one of Allen's mowers made by the firm above spoken of, I should have been induced (by his description) to have gone at once and ordered a machine, for fear in the rush I might be too late to get one ready before another harvest would be over.

We commenced mowing with the machine around a five acre lot, with two ordinary horses, a young man to manage the machine and team, and a boy to throw away the cut grass when it is so heavy as to be in the way of the machine passing over. We were a good part of four days getting it out, and had to go to the blacksmith's *nine* times to get the knives mended; a man part of the time occupied in cutting out the fence corners and around the corners of the field where it was difficult to operate with a machine. The field had been plowed twice for wheat, harrowed as usual and drilled, and stone picked for mowing with the scythe; it was the first season in grass. Our next trial was in a larger field that had been mowed the year before; this worked rather better, but the knives frequently broke loose and caused much hinderance. The machine runs quite hard for two horses, as is well known, and of the dozen, not hundreds, that came to see it all had some fault to find with it:—it run too hard, broke too easily, would not cut clean at the corners without too much trouble, would not back, and had the draft too much to one side, the screw burs would get loose too easily, &c., &c.

Our Honeybrook friend must have very hard kind of stubble ground, if it plows as hard for two horses as mowing with Allen's mower, as some in these parts put three horses to the mower, but can readily plow stubble with two, and I think the machine would not only have to be *pushed a little*, but pulled pretty hard and fast also, to cut 15 acres in a day.

While I have my hand in, I will say a word about the Lime Spreaders that are puffed and blowed about as superior labor-saving machines, and awarded premiums by committees who never saw them perform. I was induced by such influence to buy one, with which I tried to spread lime last spring, but failed to do any good with it. I concluded it was too wet for that kind of a machine and took the old fashioned shovel. After harvest one of my neighbors who had 1000 bushels of lime in heaps, got my machine to spread it with, thinking surely it would not be too wet at the end of a dry summer, although there had been a shower lately. I sent a hand along who had been instructed (as we thought) in the mysteries of lime-spreading; two or three hands worked, trying to spread for a half a day, when the machine was sent home, and one of another patent (celebrated for spreading wet lime) procured, and my neighbor, after loosing another half day with his hands, sent that machine home also and spread his lime with a shovel.

As we too often see exaggerated accounts of the wonderful performance of machinery of different kinds, in our agricultural and other papers, I think to keep the unsuspecting farmer from being imposed upon, it would be well to publish also, some of the unsuccessful experiments and failures.

Penningtonville, 1st mo., 1855. THOMAS WOOD.

Our friend has certainly been unfortunate in his purchases. His mower appears to have been imperfectly made—indeed, the demand was so great that we have frequently wondered there were not more complaints. Any *machine* to work well, must work with precision; and we trust the manufacturers having more time to perfect their machines, will profit by the past.

Address.

MR. EDITOR:—The following address was read before the Farmer's Club of York Township, Northampton county. The subject,—"Will the Improvement of the Farmer's mind tend to the improvement of his soil,"—is very ably handled, and worthy to be preserved in your pages for future reading.

By a proper improvement of the mind, we mean, in this case, the acquirement of such knowledge as will better enable the farmer to understand, and prosecute the business of his profession,—knowledge, which shall bear the same relation to his vocation, as that which is possessed by the Lawyers, the Physicians, the Ministers, the Merchants, and the Mechanics, bears to their pursuits.

The idea, we trust, is not now very extensively held, that little or no intelligence is necessary to direct rightly the operations of agriculture; though we fear the supposition is too frequently indulged, that the circumstances in which farmers are placed are unfavorable to mental energy and the culture of the mind. It is admitted that severe bodily labor is prejudicial to the energies of the mental faculties; but we are confident that the organs of both mind and body, are developed and strengthened by a due degree of muscular exercise. Hence the circumstances best calculated to improve the condition of the farmer, are those which call into proper action the intellectual and physical powers with which he is naturally endowed.

But there are now, fortunately, many farmers in our country whose labors are not so constant as to interfere with the improvement of their minds; many, indeed, are thinking and reading men; and we are forced to conclude, that it is more from lack of inclination, than the existence of real obstacles, that the class is not more numerous. The long winter evenings and stormy days afford many hours of leisure, during which a great amount of useful information might be gathered.

We have spoken of that kind of knowledge, which is to assist the farmer in his business; and the question naturally arises, how can this knowledge be most readily obtained? We answer, by observation, by conversation, and by the reading of agricultural papers from the different parts of our country.

But while we would urge the importance of inquiring, we would by no means advise a credulous assent to every story which may be heard or read. The mind of the farmer should be so enlightened, that he may be capable of judging for himself. It is only by observation, by reading, study, comparison, and reflection, that this important faculty of discrimination can be acquired.

It is often said of farming, "yes, it is a very fine thing to write about, and talk about, but when it comes to the labor of it, it is a great deal of hard work for a very little money." No doubt, as farming is generally conducted, this is a truth—but are there not disadvantages connected with the pursuit of agriculture, as it has been followed in times past, and at the present day, which would operate as strongly against the profits of any other occupation, as it has done against agriculture.

The improvement, which has been made in farming, within the last few years, or rather this improvement, so far as

the more intelligent portion of farmers is concerned, is graphically and truly described; the contrast of our best agricultural districts, with what they were in past years, is worthy of contemplation.

Relying on the earth, which ever yields measurably to the rudest cultivation, the farmer joggs on in the track of his fathers, trusting Providence for seed-time and harvest.

Every other occupation, followed with as little disposition to improve, would bankrupt all who relied upon it for subsistence; the impression has been with all, and quite as much with farmers as others, that it required little or no brains to be a farmer; law, divinity, medicine, trade—any vocation, other than agriculture, required mind and thought, enlarged and cultivated.

The farmers have been content to hew the wood, and draw the water for the community at large, to feed all, and pay most of the taxes, to obey the laws of the country, made by others, and disregarded by their authors. The farmer thought himself wonderfully well paid if, on political occasions, and at political gatherings, politicians and demagogues classed him with the dear, dear people; with the independent yeomanry of the land, and the bulwark of the nation. Politicians flatter his pride, feed his predjudices, seek the farmer's vote, and get it. As farmers, we have carried the burdens of the community, while others have thanked God for creating so patient a class as the farmers for their convenience.

This is what the farmer has been, and what he has done, and, I regret to say, it is what the farmer is yet in too many instances all over the United States. This is not a flattering picture, and yet such has been the position of far too many of our American farmers. The time has arrived, when farmers as a class should understand their true position, and should arise in their might to vindicate the dignity of their profession.

We often hear farmers complaining that their class is not fairly represented in the national councils; and these complaints are often well founded, and who are to blame but themselves, for it is through their ignorance that they are made the tools and dupes of politicians.

Gentlemen—I remember to have seen it asserted, something to this effect, by John Q. Adams, "that if there was one business, profession, or any other calling, that was more independent than another—one that could be strictly called more noble, it was Agriculture." And it was doubtless true. Agriculture is the great centre around which all the other occupations of society revolve. Trade, Commerce, Manufacturers, even the learned professions, owe their welfare to Agriculture. Look at it from any point of view we may, the farmer, simple homespun name, as that has become, wields a tremenduous influence over society. Little does that man who is quietly cultivating his potatoe-patch, or hoeing his cornfield, think of the importance of his calling. He is part of a great whole, that, to do without, would be to bring dearth and famine upon the land.

If such is agriculture, then let us hope that the dark night is passing away, and that a bright day is dawning upon us, and upon our children, and let us prepare for them, at least, if it be too late for us, a wider range of education, finer tastes and deeper sensibilities.

The good work has begun—there seems to be a general stir upon the subject of educating the farmer—the text ought to be in every man's mouth, and ways and means ought to be devised for educating the mass of farmers, and let it no longer be necessary for lawyers, doctors, ministers,—any body else but farmers, to deliver addresses, or make speeches upon the subject of Agriculture. Let them understand their own business, both theoretically and practically, and let them be able to tell what they do know when it is required of them.

The farmers, from their number, hold the balance of power in their hands in this country, and must continue to do so for years and years to come; educate them, and our republic will stand, the model and glory of the world; let them remain ignorant and uneducated, and who shall dare to solve the enigma of the future.

A great many people are opposed to the hard work on farms, for my part I like it; in our days, when men are turning and twisting, and using every subterfuge to escape from labor, and live by their wits, I welcome that calling which brings man to acknowledge the great law of God and of nature—that of labor. Excessive labor, whether physical or mental, is injurious, but rational labor is a blessing. That some men do not labor enough, and others too much, is the fault of a corrupt state of society, not of their occupation.

There is one thing, against which I would caution my fellow-farmers, and especially the experimental farmer, and that is, never to suffer their minds to run wild, while they are bestowing so much care on their farms. Depend upon it, Science and Agriculture must go hand in hand; science will aid you much, and save you from much of that unremitting, physical exertion, of which you sometimes complain.

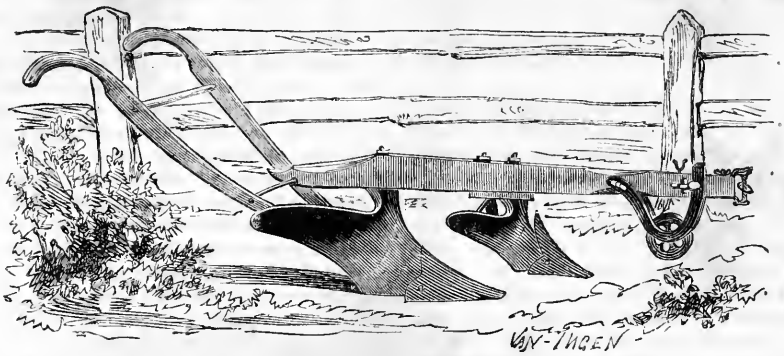
I shall now mention Book-Farming as a very necessary thing for the successful pursuit of agriculture. Yes, book-farming, that terrible bug-bear to the so-called practical farmer—for notwithstanding all the attempts which have been made to define book-farming, and to show that it is in the main, but the gathering up of practical experience, still the practical farmer, as he calls himself, flies from it as the wild horse would from before the locomotive.

I am sometimes ready to ask, were there ever men in the world, savage or civilized, so blind to their true interest as many of our farmers are? Books have been written upon almost all subjects—trade, commerce, manufactures, the sciences, the mechanic arts, and navigation, have all come in for their share; but does the merchant, the manufacturer, the mechanic, find fault with them? Does the navigator, as he sails over the wide expanse of ocean, throw aside the chart that was to guide him on his way, and when he nears some perilous shore, some rocky coast, does he exclaim, "Charts are of no use to me, I heed them not—if there are hidden rocks here, I will strike them, and by this means, will discover them for myself." Suppose for a moment, that something too theoretical has been advanced, something that practice will not bear out,—is it the right way to correct the error to turn one's back upon every thing that has ever been written, to pronounce it all bad and dangerous, and to brand it with infamy? Have not wild theories been advanced, at different times, in Philosophy, and the Sciences? How have they been corrected? Why, simply by men reading them, reflecting upon them, and by the aid of their intellects, working out truth from amid the mass of rubbish beneath which it was buried. And so too, must the truths of agriculture be worked out from the mass of rubbish beneath which they are buried.

Farmers, we are here in an age of improvement; inventions and discoveries are crowning every art and science. Shall we remain torpid, while every thing around us is teeming with the impress of intellect? Depend upon it, we are but in the infancy of our occupation, so far as mind is concerned. Can any man of ordinary intelligence look upon the present system of agriculture, without discovering in it some of the grossest errors? Men wonder that agriculture is not more profitable but are too indifferent to seek for remedies. Let us awake from this indifference—let us seek and examine, let us bring hidden things to the broad

daylight,—summon chemistry, geology, philosophy, mathematics, to our aid, and press onward to develop new resources and principles.

Free yourselves from those predjudices against book-farming, which many of you have read, and ponder well what you read, and it will not be long before your calling, which has been too long neglected from your own indifference, will rise to its true height. T. T. K.



DOUBLE MICHIGAN PLOW.

In our January number, we wrote an article on deep plowing, and recommending the double Michigan plow. Above we give an engraving which has recently been taken, and gives a very good idea of it to those not acquainted with its peculiar construction. Since we wrote the former article, we have heard additional and very satisfactory accounts of its use, and there has been also some communications respecting it in the Farm Journal from our correspondents. The mould board is much the shape of the old Prouty centre draught mould board, now so widely known for its economy in draft, considering the amount of work done. The Michigan plow is strongly built. The price is $15 50.

Wire Web Fencing.

We learn that JOHN NESMITH, ESQ., a well known manufacturer of Lowell, Mass., has recently invented and patented a machine for manufacturing *Wire Web Fencing*, and that considerable quantities of it have been successfully tried for enclosing highways, railroads, canals, fields, gardens, cemeteries, heneries, for grape and rose trellises, for ornamental garden work, etc. It is varnished (black) with asphaltum varnish, or coated with coal tar, painted, japanned, or galvanized, to beautify and preserve it. It is rolled up in portable rolls, from twenty to forty rods in length, and any ordinary farmer can set it up for himself. No rails are used; but the netting is fastened to parts of wood, iron, or stone, set from ten to fifteen feet apart, with hooks, wire, nails, or staples. The only skill required in setting it up is to keep it straight, and moderately tight. This is done by hand.

We have observed that many of the agricultural papers speak highly of this fence. The *Plough, Loom & Anvil* hails it as "a blessing to all the farmers of the country." The New England *Farmer* says:

"When properly set, it is strong enough to "hold" an ox, and too close to be penetrated by a chicken If varnished, painted or tarred, once in five or six years, it is calculated to last a century or more. It offers so little resistance to wind and tide, that no gale can blow it down, or flood wash it away. If fastened to posts, set upon feet instead of being set in the ground, this fence may be laid flat on the land, or entirely removed on the approach of the flood-season in districts subject to floods, and set up again as good as ever, when the flood has subsided. It excludes none of the rays of the sun; it harbors no weeds, or vermin; it covers none of the soil, like hedges and walls, and the peculiar mode of its texture en-

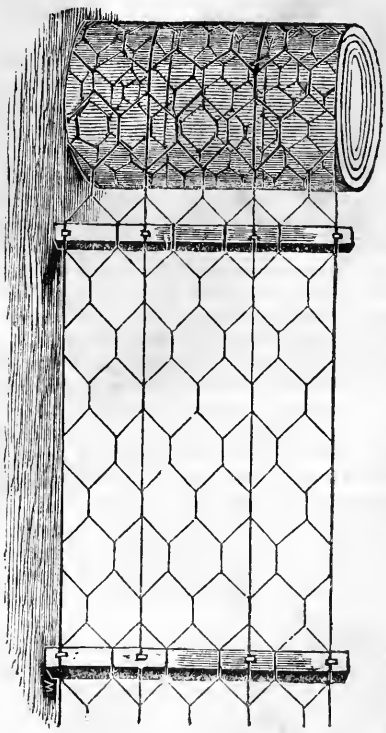


FIGURE 1

ables it to undergo without the slightest injury, that al-

ternate expansion and contraction to which all metallic substances are subjected by the changes of temperature incident to the atmosphere. All who have examined or tried it, attest that it possesses in the highest degree, those seven cardinal qualities in a perfect fence or trellis-work—strength, closeness, beauty, lightness, portability, cheapness and durability."

We are happy to present some cuts to illustrate several kinds of this fence.

Figure 1 represents the best field fence of the Lowell Wire Fence Company—cheap, strong, close, light, elegant and durable; 4 feet high; lateral (or straight) wires of No. 10 wire; body of No. 12 wire; price $1.10, (or if the body be of No. 15 wire, 75 cents,) per lineal rod.

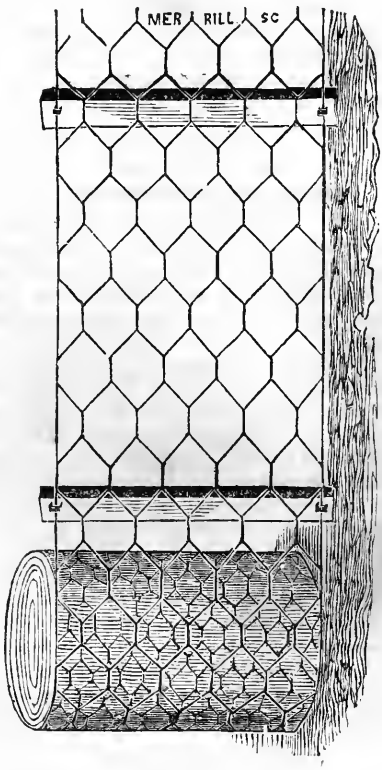


FIGURE 2.

Figure 2 represents a still cheaper mode of wire fence for fields, &c.; being of the same height, with wire and mesh of the same size, but without the wire rails in the body of the fence. Price 95 cents per rod—some of this kind, of No. 15 body wire, is only 60 cents per rod.

Figure 3 represents the wire, sheep, poultry, garden or cemetery fence, with mesh of 3 inches—some 16 inches, some 3 feet, and some 4 feet high; outside wires of No. 12 wire; inside wires of No. 15 wire. That 4 feet, is $1.50 per rod; that 3, is $1.12½; and that 16 inches, 65 cents. These modes of fence may be made lighter or heavier, as purchasers desire.

Hon. MARSHALL P. WILDER, President of the United

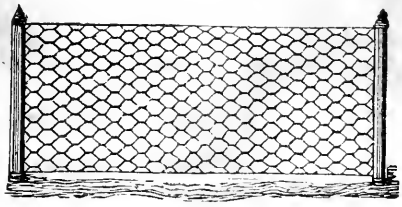


FIGURE 3.

States Agricultural Society, who has used some of this fence, in a letter to CHARLES CROWLEY, ESQ., says:

"I have recently examined some of the netting of the Lowell Wire Fence Company for fences, trellises, etc. From my own experience, and that of others, I cannot doubt that it is perfectly practicable as a fence for fields and gardens, or that it is well adapted to all uses where a strong, close, elegant, economical and durable fence is required. Where stone is not abundant, or where lumber is expensive, as in many of our States, I should deem it the most practicable fence that could be procured. If our railroads are hereafter to be enclosed, as safety and economy demand—they can scarcely be fenced cheaper or better than by this mode of fence. The stouter kinds of this netting are of such strength, that cattle could not easily penetrate or pass it; while the closeness of the lighter kinds renders them admirably available for garden uses, heneries, and poultry fences. Fencing like this has for some years been extensively used in Great Britain; and, since it can now be made at a much less cost by machinery, it would seem to be equally adaptative to the United States. I know of no fencing so good as this, that can be procured

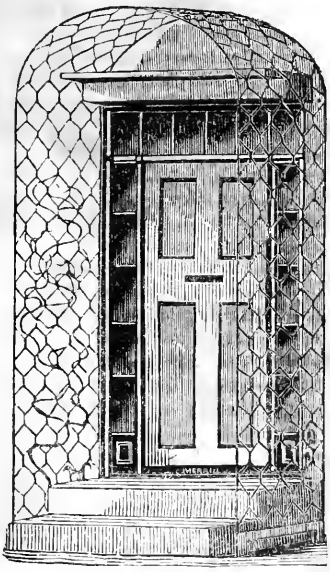


FIGURE 4.

for $1.50 per rod, the highest price asked for the most costly kinds of this netting; and this is, probably, the only fencing of equal merit that can be bought for $1.50 per rod

"As a material for rose-trellises, grape-trellises, and ornamental work in gardens, I think it unequalled in cheapness, durability and beauty, by any thing yet devised. It will, without doubt, eventually be received into general use, when its merits are appreciated by the public."

Figure 4 represents an elegant trellis-work for roses, grapes, etc., varying in width from 16 inches to 4 feet; in mesh from 1 to 6 inches; in wire from No. 10 to No. 18. The price varies according to the size of the wire and mesh, and the width of the netting itself.

Rape Seed Oil.---Extracts from Report of Light House Board.

In 1841-'42	the price of	Sperm oil was	$0,55	per gallon.
In 1847-'48	do	do	$1.07.18	"
In 1851-'52	do	do	$1.19.37	"
In 1853-'54	do	do	$1.38.75	"

and the last purchase made by public contract for the light-house establishment was at $1.58 for full-strained sperm oil.

The most respectable merchants and ship-owners, engaged in the sperm whale fishery, are of opinion that there will be a considerable advance upon the present price ($1.60 per gallon) for winter oil during the present year, and that it will probably be as high as $2.00 per gallon, at no distant day.

The rapid advance in the price of this essential article for light-house purposes is said to be attributable to the limited and annually diminishing supply, and to the increased demand for it, for lubricating and manufacturing purposes in this country and in Great Britian.

* * * * * *

Numerous experiments have been made to test the practicability of using lard oil, cotton seed oil, and some of the various patent oils, both animal and vegetable, in light-houses; but it is believed, that with the exception of the *Colza* or rape seed oil, none of them are suited to purposes of light-house illumination.

The light-houses and light vessels on the continent of Europe and in Great Britian, with few exceptions, are now illuminated by the colza or rape seed oil. It has been found after careful test, and by trial, to be superior in many respects to the best sperm oil, while its cost, is only about one half the present price of sperm oil.

This valuable agricultural product occupies an important place in the economy of the farmers of France, Belgium, Holland and many parts of Germany. It is in fact the great agricultural staple of many districts, and from which the farmers derive their entire living income.

In England this vegetable is cultivated, not so much for the production of oil which it yields, as for grazing and fertilizing purposes. In this country it is cultivated to some extent for grazing and as a fertilizer of the soil.

Among the German population of Texas, the Colza is cultivated, and the oil expressed from its seed in sufficient quantities to supply the domestic wants of the cultivators.

In Mexico it has been introduced, and it is understood that many villages, towns and cities, including the city of Mexico, are dependant upon it for oil to light their streets and houses.

There is no doubt that this valuable vegetable could be very successfully cultivated in nearly every portion of the United States; and even at the present European price for the oil, it would prove quite as remunerative as tobacco, wheat, and Indian corn.

The annual diminution in the supply of sperm oil, and the increasing demand for it for mechanical purposes, would seem to render it indispensable, that an article of good quality, and adapted to purposes of illumination, should be found as a substitute for it.

With these facts and results, it is believed, that it is only necessary for the agriculturists of the country to give their attention to the subject, to insure the production of an oil, that will be superior to that from the sperm whale for purposes of illumination, and which will be highly remunerative to the producer, at one half the present price of sperm oil.

The cultivation of this vegetable on a large scale would prove a great boon to the country, as well as a source of profit to the producers. It would also be the means of rendering us altogether independant of European markets, and of their fluctuations, for oil for illuminatiug our light-houses in case of a failure of the supply from the sperm whale fishing grounds, and also in the event of the interruption of the fisheries, and of commerce by war with a powerful maritime State.

* * * * * *

Should the agriculturists of this country not commence the cultivation of this valuable and remunerative product, and should the supply of sperm oil continue to diminish in the same ratio it has done for some years past, this government will be reduced to the necessity of importing rape-seed oil from Europe for the light-house service.

It is believed that this course could be advantageously adopted now.

For the Farm Journal.

Wheat vs. Cheat.---A Challenge.

TURBOTVILLE, PA., OCT. 26th, 1854.

FRANCIS SCHRINER:—Dear Sir:—Having noticed your statement in the June No. of the Farm Journal, that you had sown a patch of wheat in *your garden* that a *"neighbor had undertaken to turn to cheat,"* and feeling some desire to know the result of the effort, I will be thankful if you will inform me whether he was successful.

If his method failed, I may be able to suggest several other different methods, that I presume has been more successful

I would not desire so liberal an offer as that of a *farm with stock,* but if you desire to see the matter fully tested, and will make a pledge not exceeding two hundred dollars, to be available, *provided it is successful,* I will make the experiment on a square rod of good wheat, beginning the latter part of next April, and demonstrate that the thing is practicable. In order to satisfy you that there will be no deception, and that you shall be at no other expense on account of it, I will be willing to perform the experiment for you in your own neighborhood; and when it is satisfactorily accomplished, and you pay the two hundred dollars, the same shall be appropiated to the cause of Agricultural Science. I have the pleasure to be yours, Very respectfully,

H. MILLER.

THE CHALLENGE ACCEPTED.

MR. HENRY MILLER:—Dear Sir:—Yours of the 26th Oct. is received, and after deliberation, I would say, I am not in the habit of betting, but upon such a subject as the Science of Agriculture, I can see no harm in a mutual agreement for one or the other of us to forfeit a certain sum for the benefit of the Science. I will therefore accept your challenge, with a little alteration in the modus operandi.

An experiment made "upon a square rod of good wheat," whatever I might think of it, would not be satisfactory to an incredulous public. *They* might not be willing to award to you the merit of having accomplished the proposed change, upon the ground that they *could not know* what plants might be growing *on,* or what seed lurking *in,* "a square rod of ground," so our experiment might end just where it begins, *proving only,* that cheat grows where wheat has been killed out, which we well know. I would therefore suggest that I be permitted to select a number of plants (say ten) which I

will be certain have sprung from good wheat, and upon these I invite you to operate at any time, or at all times, between this and next harvest, by "freezing, drought, choking" or *hanging*, or any other, penal or fancy process, so as to cause them to produce cheat, *without bringing the influence of any other grain, except clean wheat to bear upon them.* For which services I am ready to enter into obligations, secured by real estate, to pay to the Agricultural Society of Pa., two hundred dollars when the job is completed, or twenty dollars for every plant so changed. It is as easy "for an entire field of wheat to turn to cheat as a single stalk," and *vice versa.*

You will of course be expected to enter into similar obligations, to pay the same sum for the same purpose, in case of failure. This I hope will bring a fair experiment before our neighbors. There must be a committee appointed to watch the ten plants, and not permit any other than wheat to grow near them. With much respect, Yours,

F. SCHREINER.

Moss Grove, Dec. 30th, 1854.

Although aware that our friends are becoming tired of the discussion of wheat and cheat, we insert the above correspondence in the hope that it will bring the matter to a point. Should Mr. Miller succeed, we will cheerfully chronicle the fact, although it be contrary to the united voice of science and of observation.—Ed.

Poland Oats.

B. P. Foster, in the *Michigan Farmer*, says:

I have raised the Poland oats for three years past. The weather has been very dry here in that time, and from my own experience, I think this kind of oats well adapted to the climate of Michigan. I have tried several kinds, and these have done the best of any that I have sown.

I obtained a sample of Mr. Tucker's oats, and on comparing them with mine, find them to be the same, and both are, to all appearance, and according to the descriptions I have seen, the true Poland oats.

I will now state in what respect I consider them superior to any other kinds, for this country, so far as I have tried them. I simply give the facts:

1st. They require less seed to the acre, as they tiller, or stool, out a great deal, from five to ten stalks springing from one kernel. One bushel to one and a half is enough to the acre. (This year I sowed mine very thick—two bushels to the acre.)

2d. The straw is longer and stiffer, and not so liable to lodge.

3d. They yield more, and are heavier, and better to feed.

4th. They will produce more on poor land than any other kind I ever tried.

5th. They will stand the drouth remarkably well.

They need not be sown early. Mine were ripe when my wheat was. They were sown the first of May.

Average Yield of Wheat in Great Britain.

In reply to an enquiry, the *Mark Lane Express* says:—"The average of the three Scotch counties last year per acre stands thus:

Roxburgshire,	22 bushels.
Haddington,	26 "
Sutherland,	32 "

giving a general average of abour 26 bushels; but this is under ordinary years. Upon the whole our averages are rising—that is, they now exceed what they were a few years back; and probably 28 bushels per acre may not be far from the average of England. With regard to the average of this year, opinion is so much divided that, as yet, it is hardly safe to give a definite estimate, some setting it at one-fourth above that of ordinary years, others at a great deal less."

Pennsylvania Horticultural Society.

At the request of a gentleman connected with the Pennsylvania Horticultural Society, we publish the annexed official report of meetings which has not heretofore appeared in the Journal. We hope to be able hereafter to obtain the reports monthly.

September 19th, 1854.

The Stated Meeting of the Society was held in Sansom Street Hall this evening.

Dr. W. D. Brinckle, Vice President, in the chair.

On motion, *Resolved*, That no member of either Standing Committees on awarding premiums shall be considered qualified to act from whose collections objects for competition are presented at either the Annual or Monthly exhibitions of the Society.

Resolved, That the Secretary is hereby directed to append to the name of every private gardener that of his employer also, in all cases where the former shall appear on the records of the proceedings of the Society.

Member elected.—John Churchman.

Objects Shown.—By William Johns.—Fine Grapes.

By John P. Aertson.—A basket of figs.

October 17th, 1854.

The Stated Meeting was held in Sansom Street Hall this evening.

Dr. W. D. Brinckle, Vice President, in the chair.

Report of the Committee for awarding premiums on Fruit.

Pears—Collection of fifty specimens of ten varieties—for the best, to Isaac B. Baxter. *Apples.*—Collection of fifty, ten varieties—for the best, to E. A. Vickroy, of Johnstown, Pa. A special premium of one dollar to Jerome Graff, gardener to Caleb Cope, for a dish of fine Reine Claude de Bavay Plums.

The Special Committee appointed to assist in conducting the Horticultural department at the State Agricultural Fair, held at Powelton, submitted a Report, in which they assign reasons for the "sad condition" of the articles returned to those persons who so kindly and generously contributed of their choicest productions, and express their dissappointment and dissatisfaction of an omission on the part of the Managers of the Agricultural Society to provide the facilities indispensable to a more successful display of horticultural objects.

Honorary and Corresponding Members Elected.—Dr. Pierre Bretonneau and Dr. Frederick Le Clerc, of Tours, France, and Alexander Bivort, of Belgium.

Objects Exhibited.

Plants.—By Thomas Robertson, gardener to B. A. Fahnestock.—Coleus Blumei, Ixora blanda, Clerodendron paniculatum, Veronica Andersonii, Pentas carnea, Angelonia Gardneriana, Torenia Asiatica, Passiflora amabile, Achimenes coccinea, Gloxinia alba-sanguinea, Fuschia Mazeppa and Cuphea platycentra.

By William Thompson, gardener to John Tucker.—A specimen of Dipladenia crassinoides in full bloom.

Cut Dahlias.—By Robert Buist, of choice varieties—and Gerhard Schmitz, a large collection of his fine seedlings.

Bouquets.—By James Kent, gardener to J. F. Knorr.—A pyramid suitable for the hand.

Fruit.—By Isaac B. Baxter.—*Pears.*—Doyenne, Napoleon, Vicar of Winkfield, St. Germain, Easter Beurre, B. Rance, D'Aremberg, Chaumontel, Seckel, Broom Park, Duchesse d'Angouleme, Passe Colmar. *Grapes*, grown in the open air.—4 bunches, White Portugal, Catawba and Isabella.

Dr. E. A. Vickroy, of Johnstown, Pa.—*Apples.*—Ewalt, Sweet Michler, Huber's Pippin, Holland Pippin, Yellow Pippin, Rambo, Russet, Pound, Pride of Richland, Belle-fleur and Gilliflower.

By Jerome Graff, gardener to Caleb Cope.—*Plums.*—Reine Claude de Bevay.

By Alexander Parker.—*Pears.*

November 21*st*, 1854.

The Stated Meeting of the Society was held in the Saloon of the Assembly Buildings, corner of Tenth and Chesnut Streets.

The President in the chair.

Premiums were awarded as follows:—By the Committee on Plants and Flowers.—*Chrysanthemums*, 12 plants, large varieties, for the best; 12 plants, dwarf varieties, for the best. *Chrysanthemum*, American seedling, for the best; specimen plant, large variety, for the best; dwarf variety, for the best, all to Robert Buist. And a special premium of three dollars to Alexander Parker for a display of Chrysanthemums. For a collection of plants in pots, a special premium of three dollars to Thomas Robertson, gardener to B. A. Fahnestock. Specimen plant, for the best, to William Thompson, gardener to John Tucker, for a fine specimen of *Luculia gratissima*, in bloom; for the second best, to Thomas Robertson, gardener to B. A. Fahnestock, for *Coleus Blumei*. Basket of cut flowers—for the best, to Jerome Graff, gardener to Caleb Cope. And a premium of five dollars to Jerome Graff, gardener to Caleb Cope, for a fine specimen of *Cissus discolor*, shown *in bloom* for the first time, and in all its splendor. The special attention of the Society was called to this plant; it was trained in an oval form, measuring six feet in height, and twelve feet in circumference; also to the display of Chrysanthemums, many of which measured ten feet in circumference. The Luculia was by far the best ever exhibited before the Society.

By the Committee on Fruits.—*Pears*—ten varieties, for the best, to Isaac B. Baxter. *Apples*—ten varieties, for the best, to E. A. Vickroy, of Johnstown, Pa. The Committee noticed a mammoth Pear, by Charles Kessler, of Reading, the Belle Angevine.

By the Committee on Vegetables.—For the best display by a market gardener, to A. L. Felton. *Celery*—for the best six heads, the White, and for the second best, the Red, to James Jones, gardener at the Girard College. *Broccoli*—for the best; *Brussels Sprouts*, for the best, to A. L. Felton. The Committee notice a fine display of Cucumbers by Mark Hill, gardener to M. W. Baldwin.

The Special Committee appointed to secure a Room for holding the monthly meetings in, reported in favor of securing the Concert Hall, which was offered for thirty dollars per night, on the third Tuesday of each month, embracing the use of a small room adjoining, for the Library, which was accepted, and the Committee discharged; and the arrangement for carrying the same into effect referred to a Committee, consisting of the President, Treasurer and Secretary.

The Delegates appointed to attend the session of the American Pomological Society, held in Boston, 15th September, submitted a Report which they were requested to amplify and report at the next meeting.

A copy of the Minutes, in printed form, of the Philadelphia Society for Promoting Agriculture, from its institution, February, 1785 to 1810, was presented to the Society by Dr. Kennedy, and a vote of thanks ordered therefor.

On motion, Ordered that a Committee of five be appointed to confer with the City Councils on the subject of the conversion of the estate known as Lemon Hill into a public park; and that said Committee be and they are hereby instructed to urge upon the city authorities the importance of so arranging the grounds as to provide for the establishment of a Botanic garden thereon.

Objects Exhibited.

Plants.—By Thomas Robertson, gardener to B. A. Fahnestock.—Cypripedium insigne, Begonia incarnata, Pentas carnea, Camellia j. Eclipse, Ceropegia elegans, Angelonia Gardneri, Epacris impressa rosea, Geissomeria longiflora, Mimosa sensitiva arborea, Daphne Indica arborea, Chrysanthemum v. Asmode, Torenia asiatica—Specimen—Coleus Blumei.

By Robert Buist—12 large and 12 Pompone varieties of Chrysanthemums; a specimen of large, of Pompone, and of an American seedling Chrysanthemum, a golden yellow.

By Jerome Graff, gardener to Caleb Cope.—Cissus discolor—a fine specimen the first time shown in bloom; it was trained in an oblong oval form, measuring six feet in height and twelve feet in circumference.

By Alexander Parker.—A large collection of Chrysanthemums.

Bouquets, &c.—By Jerome Graff, gardener to Caleb Cope.—A Basket of Cut Flowers.

By James Kent, gardener to J. F. Knorr.—Four hand Bouquets, not in competition.

Fruit.—By Isaac B. Baxter.—*Pears.*—Passe Colmar, Niles, St. Germain, Chaumontel, Broom Park, Duchesse d'Angouleme, D'Aremberg, Le Cure, B. Rans, E. Beurre.

By E. A. Vickroy, Johnstown, Pa.—*Apples.*—Ewalt, Belle-fleur, Sweet Michler, Golden Pippin, Huber's Pippin, Pound, Russet, Fall Pippin, Blue Pearmain, and a seedling.

By Jonathan Baldwin, Chester county.—*Apples.*—Indian, Carthouse and Lady.

Vegetables.—By A. L. Felton.—A large table of fine varieties.

By James Jones, gardener at Girard College.—Red and White Celery.

December 19, 1854.

The Stated Meeting of the Society was held in the Saloon of the Assembly Buildings this evening.

The President in the chair.

The following premiums were awarded:

By the Committee on Plants and Flowers.—Basket of Cut Flowers, for the best, to Jerome Graff, gardener to C. Cope; for the second best pair of hand Bouquets, to the same; and a premium of three dollars to the same for a plant of *Angræcum bilobum*, shown in bloom for the first time. They noticed a leaf and flower of *Nymphæa cærulea*, shown for the first time.

Pears.—For the best, to Isaac B. Baxter. *Apples.*—For the best, to E. A. Vickroy, of Johnstown, Pa.; and a special premium of one dollar to W. V. Pettitt, for fine specimens of the Niles Pear.

Vegetables.—For the best display by a market gardener, to A. L. Felton; and a special premium of two dollars to Mark Hill, gardener to M. W. Baldwin, for a fine display of Lettuce, Radishes, and Cucumbers; and another of one dollar to Wm. Thompson, gardener to John Tucker, for two fine Cucumbers.

The Treasurer submitted his semi-annual statement of accounts, which was read and referred.

The Library Committee presented their annual Report, in which they stated that twenty-eight volumes had been bought since the last report, and that six had been presented; and that five dollars had been paid by members for fines. They also alluded to the fire which occurred on the evening of the 5th of July last, and destroyed the Philadelphia Museum building, in which the Library was kept; but they were pleased to congratulate the Society in its preservation; that some eighteen books were lost in the removal, but the underwriters had paid for the same.

Pennsylvania Horticultural Society.

The stated meeting of the Society occurred on the 20th ult., in Concert Hall, and gave general satisfaction. For the future all the monthly meetings will be held in this Saloon. The President in the chair. The display was very good—collections from four green houses were shown. In Mr. Buist's there were several new and interesting plants—the *Dendrobium Wallichianum, Azeleas Iveryana* and *Geranium Snow Ball*, a beautiful *Rogiera Thirsiflora*, and an exquisite seedling Camellia, a white tinted with rose. In Mr. Fahnestock's were a very graceful *Acacia Probescens, Camellias*, and other choice plants. In Mr. Tucker's, several species of beautifully trained *Kennedyas, Azalea Pallida*, (*new*,) and a dozen handsome Cinerarias. Mr. Raabe bought a seedling white *Azalea* and vases of Hyacinths. Mr. Mackenzie exhibited *Camellias*, a new seedling of a rosy-pink color, his Ellen and *Reine des fleurs*. Cut Camellias of the finest varieties were exhibited by Mr. Buist's, Mr. Cope's, and Mr. Lambert's gardeners. D. R. King's gardener presented a Moss Vase, bearing a fine pyramid of flowers. Six beautiful baskets of cut flowers were shown by the gardeners of Mr. Baldwin, Mr. Cope, Mr. Tucker and Mr. Lambert. A brace of Cucumbers from Mr. Tucker's, and a dish of Asparagus from Mr. Cope's houses, were on the tables. The following premiums were awarded by the Committee on Plants and Flowers—*twelve cut Camellias*—for the best, to Robert Buist; for the second best to Jerome Graff, gardener to C. Cope. *Collection of twelve plants*—for the best, to Thomas Robertson, gardener to B. A. Fahnestock; for the second best, to Robert Buist. *Collection of six plants*—for the best, to Wm. Thompson, gardener to J. Tucker. *Specimen plant*—for the best, to Thomas Robertson, gardener to B. A. Fahnestock; for the second best, to Robert Buist. *New plants*—a premium of three dollars to Robert Buist, for *Dendrobium Wallichianum, Azalea Iveryana* and *Geranium Snow Ball*. *Table design*—for the best, to Cornelius O'Brien, gardener to D. Rodney King. *Basket*—for the best, to Mark Hill, gardener to M. W. Baldwin; for the second best, to Jerome Graff, gardener to C. Cope. *Bouquets*—for the best pair, to J. J. Habermehl, gardener to John Lambert; for the second best, to Jerome Graff, gardener to C. Cope. For a splendid seedling Camellia, the silver medal, to Robert Buist. Special premiums of one dollar each, for fine Baskets, were awarded to Wm. Thompson, gardener to J. Tucker; to Mark Hill, gardener to M. W. Baldwin, and to J. J. Habermehl, gardener to John Lambert. The Committee noticed a fine seedling Camellia by P. Mackenzie; a dozen beautiful seedling Cinerarias by John Tucker's gardener, and a fine seedling Azalea and Hyacinths by Peter Raabe.

By the Committee on Vegetables—*Special premiums* of one dollar each, to Wm. Thompson, gardener to John Tucker, for a brace of cucumbers, and to Jerome Graff, gardener to Caleb Cope, for a dish of asparagus.

The Committee of Finance reported upon the Treasurer's statement of accounts.

A bill for printing transactions was ordered to be paid.

An interesting letter was read from Dr. Joseph Wilson, Jr., Surgeon, of the U. S. Navy, from U. S. ship Supply, on Chinese horticulture.

Dr. Brinckle resigned his office of Corresponding Secretary.

On motion, ordered that the Special Committee to confer with City Councils on the subject of so arranging Lemon Hill grounds so as to provide for the establishment of a Botanic Garden, be instructed to embrace also Hunting Park as an arboretum, and the general improvement of any other public squares.

Seed Corn---Birds---Worms.

For the past ten years I have succeeded in preserving my corn from the depredations of birds and worms, by a very simple and easy process. I throw about half a bushel of seed at a time into an iron kettle, and then add about three half gills of tar, stirring the mass briskly in the meanwhile; then continue stirring until every grain looks as if it had received a coat of varnish. To know when the process is completed, throw the corn into a heap against one side of the kettle, and if right it will creep slowly back again, and in time regain something approaching a hard surface. This part of the operation, which need not at any time occupy ten minutes, is facilitated by doing it under a hot sun.

Next sift about a quart of dry slacked lime over the corn, and then stir until every grain is coated with lime and rendered perfectly dry. Three minutes will suffice to do this. In the absence of lime, wood ashes will answer very well.

Birds cannot or will not eat corn so treated. They may pull up a stalk or two, but when they find how matters stand, they leave for some other field.

It was to guard against the depredations of birds, that I adopted this device; but I found by experience, that it not only preserved corn against them, but that worms would not cut stalks springing from tarred seed. Doubtless some slight traces of the tar is taken up by the young plant, and being as is well known, highly offensive to all animals of that kind, the plant escapes from the attacks of this enemy also.

The seed germinates as quickly, and the plants come up as uniformly and vigorously, as if planted bare. Indeed, ever since I adopted this method, I have had neither loss, trouble nor anxiety from birds or worms; and if I could have my way, no one should kill a crow or blackbird on my premises, or in my neighborhood. JOSIAH COPLEY.

Armstrong Co., Pa., Feb., 1855.

An Interesting Inquiry.---Continued.

Mr. Darlington:—In the January number of the Farm Journal, under the heading of "An Interesting Inquiry," by C. W. B. of Camden, N. J., on the subject of raising corn, or rather, why it is that he cannot raise as much as he could twenty years back, even when his land has been limed and manured "liberally."

Though our soil differs materially from that described by C. W. B., being limestone gravel, mixed with sandy loam, naturally good for producing corn, but of late years we have experienced something of the same results; I say we, for a number of my neighbors that I have spoken with have experienced the same. Corn will come up and look as well as usual, until the third or fourth leaf puts out, when it begins to assume a stunted appearance, and if a favorable season it may attain to the height of two and a half to three and a half feet high, with striped leaves, seldom having an ear on it. I have been careful to examine if it might not be affected by some worm or insect, but have hitherto discovered nothing, except the first or principal root is dead. We will perhaps not find more than two or three hills in a place, in another place we will find half a dozen, or more, and I think I may say it is only thus affected on land that has been limed *some time*; here we have been almost forced to the conclusion that too much lime is the cause. As the corn crop is an important one to the farmer, and becoming yearly more so, I would like through your useful "Journal" to have the opinion of others more experienced, and the antidote, if there is one. R. H. L.

Union Co., Pa.

The New American Pastoral.

By the politeness of the Publishers, Parry & M'Millan, corner of Fourth and Chesnut streets, Philadelphia, we are in receipt of a copy just published of "The New Pastoral," by Thomas Buchanan Read, a native of Chester county.

Following the example of Cowper and Thompson, the design of the author appears to have been, to describe the rural life of *America*, its associations, pleasures and familiar phases, to open out to public view, both in the new and old world, the very heart and pulse of our people, as illustrated in their daily, familiar history.

With how much minuteness and accuracy he has succeeded, may be observed in the following extract. No American can read this book without recognizing its truthfulness, graphic descriptions, and truly poetical and happy illustrations of every day life in America. It is so exceedingly natural, that one educated in the country is at a loss to know "how he could have written any thing else."

The "New Pastoral" pursues a new and hitherto untrodden path by any of our American Poets, supplying a vacuum, long wanting. It is truly national in its spirit and tone, giving utterance occasionally to lofty and patriotic sentiments, which must find a response in every heart. It will be welcomed as the *first* truly American Poem, and we hope to see the ground thus broken, speedily occupied by future efforts in the same direction.

We predict for the "new Pastoral" an immense circulation. It must become one of the indispensables for the centre table in America, both in the palace and the cottage.

Day dawns,
And with it swells the sounds, afar and near,
Of lowing cattle, and the crowing cocks.
From farm to farm the wakening signals run,
And the blue smoke ascends. The sheep, released,
Leap the low bars and, following their bell,
Go bleating to the pasture. And, anon,
The ploughman drives his team into the field,
And treads the furrow till the horn recalls.
Meanwhile the kine their generous udders yield,
And fill the sounding pail, till it o'erruns,
And drips the path with foam. Then, at the spring,
The snowy liquid poured in careful rows,
And on the watery slabs arranged to cool,
Gleams like a series of full moons. Afar
The giant forge, at labour 'midst the hills,
Throbs sullen thunder from its iron heart,
And 'neath yon poplar, bursting into bloom,
The lesser anvil rings. While from the cot
Which on the breezy upland greets the east,
The windows blazing with the morning red,
The loom makes answer with its busy beat.
Look in to-day upon the murmuring school.
There sits the old man at his wonted desk,
Round which the scholars stand in crescent rows,
Class after class, the oldest coming first;
Then, gradually descending, till the child
In russet slip comes tottering to his feet,
And finds a place upon the knee of age,
Where dimpled fingers point the letters wrong,
Or stray unchided to the master's watch-seals.
How like a hive, the busy school house hums!
Till comes the hour of recess, when in streams,
With laughter loud, they pour into the air,
And join in various games. * * * *
Now bloom the orchards, and the noisy bees
Sing like a wind among the snowy limbs.
The occupants of neighbouring garden hives
Are there, in full communities, to mine
The odorous Eldorado; and the wasp
Dropping his long legs, like a flying crane,
Lights on the flower, and, with his ready sting,
Threats the intruder. There the humble-bee
Comes booming, and departs with laden thighs.
The yellow-jacket, small and full of spite,
Bedecked in livery of golden lace,
Comes with the fretful arrogance of one
Who plays the master, though himself a slave;
And over all, the tyrant of the hour,
The kingbird, hovers, darting on his prey;
And takes the ventured argosy of sweets,
Then boasts his conquest on the adjacent branch,
Where, like a pirate hauled against the wind,
He waits another sail. From limb to limb,
The birds which here delight to build their nests—
The blue-bird, and the robin, and the small
Gray wood-pecker—now flit among the flowers,
Until the air is full of life and song,
As it is full of perfume. Now begins
The housewife's happiest season of the year.
The ground already broken by the spade—
The beds, made level by the passing rake—
The almanac consulted, and the signs
Conspiring favour—forth with apron full
Of choicest seeds, the best which last year gave,
She sallies to the garden where, all day,
Breathing the pleasant odour of the mould,
She bends and plants, while, to her eye of hope,
Here springs the early pea, and there the bean,
The lettuce and the radish, and what else
Her culinary providence requires.

The Pennsylvania Farm School.

It will be recollected that the Legislature, last winter, passed an act incorporating an institution with the above title; but owing to certain defects, it was found impracticable to effect an organization, and the friends of the measure were induced to ask the present General Assembly to pass another bill, which has been done. This bill will be found on another page. At the time of sending our forms to the stereotyper's it had not received the signature of the Governor, but we learn there is no doubt he will sign it in due time.

The bill, although not perfect, is, in our humble judgment, a great improvement on the act of last winter. The most serious defect which we observe, is the absence of any appropriation to aid in establishing the school. We had hoped from the number of enlightened and liberal minded gentlemen in the Legislature, that an appropriation of at least ten thousand dollars would be made to aid the institution, which, if wisely managed, as we have no doubt it will be, must add greatly to the products, income and property of the State at large. But in this we have been disappointed.

To any one who will reflect for a moment on the advantages which must necessarily arise from an institution of this kind, the sum of ten thousand, or twenty thousand dollars, appropriated towards establishing it, shrinks into utter insignificance, comparable only to the penny-wise and pound-foolish policy of the niggardly throughout the world.

It should be remembered, and we trust our law-makers will not lose sight of the fact, that this is not a mere private enterprise or speculation, intended to benefit corporators or stockholders. Nor is it intended to be a local concern with circumscribed limits of usefulness. On the contrary, it is designed to be a *State Institution*, drawing its students from, and spreading its light over, every part of the Commonwealth. Those who are moving in the matter are doing it from the most disinterested motives, desiring only the diffusion of agricultural science among their fellow citizens, and the utmost improvement in their husbandry. They have no prospect of gain, which is not common to every citizen of the State. If the members of the Legislature, nine-tenths of whom are the representatives of farming constituents,

will but give this subject the attention it merits, we are sure they will insert in the general appropriation bill, an item of ten thousand dollars to the Farmers' High School, and complete the work they have begun. This sum, with a like amount to be given by the State Agricultural Society, together with what will be added from other sources, will place the institution on a solid foundation, and go far towards insuring its success.

Mangold Wurzel Leaves

From an article in the English Agricultural Gazette, it appears to not have been an uncommon practice in England, to strip off successive crops of leaves of mangold wurzel or sugar beet, for feeding to the cows, under an impression that the roots were not materially injured. We do not know that it has been done here to much extent, but careful experiments have now been made, which prove conclusively that it is injurious in every respect, not only to the yield per acre, but the intrinsic qualities of the roots also.

The leaves it is also found have deteriorated the quality of the milk by careful analysis, and promoted diarrhæa in the cows.

The conclusions arrived at are, that leaves cannot be systematically taken from the growing plant, without lessening the quantity of roots. 2. The decreased quantity of roots does not yield so large a per centage of nutritive matter, as are contained in those that are uninjured, and 3. That the injury to the roots is by no means counterbalanced in quantity or quality, by any value we might attach to the leaves.

Fruit and Ornamental Trees.

Before another number of the Journal reaches our readers, the season for planting will fully have arrived, and we hope every owner of an acre of land, for his own pecuniary benefit, (which in some cases is the most important consideration,) for the benefit of those who are to come after him, and for the health, comfort and enjoyment of himself and family, which will be almost an immediate result, will not forget to *plant*. *Plant, Plant, Plant*, should be the *one* idea ever present for the next six weeks. Let every fence corner, every open space, every good exposure, be watched for and hunted out, where a tree of some kind can be not merely stuck in, but *planted* as it should be, and with the object of making it not merely *live* but *grow*, *thrive* and *bear fruit*, or foliage for ornament or use. In former numbers of the Farm Journal, we have treated copiously of the mode of planting, and the varieties of trees best adapted for fruit and ornament, &c , and as our space is too limited now to go over the subject at length, we will recommend two books better adapted than any two we know of, for conveying *all* necessary information in a cheap simple form—Barry's fruit book, and Meehan's hand book of ornamental trees. The two can be obtained for a couple of dollars, and we will furnish them, or send them to any of our friends who will enclose us that amount. Many, very many other excellent works can be obtained, but none equal to those two for *condensed, practical, useful* information on the subjects of which they treat.

In our present number will be found the list recommended by the American Pomological Society, which is entirely reliable, as regards fruit. In respect to ornamental trees and shrubbery, there is a wide selection. Of evergreen trees, first and foremost we recommend the Norway Spruce, Abies excelsa, as being unsurpassed, and perhaps unequalled as a tree for all localities. To this we would add for every lawn, some White Pines, (Pinus Strobus,) Hemlock (Abies Canadensis,) European Silver Fir (Picea Pectinata,) a magnificent tree, with dark rich foliage, and not half so much known as it should be, and also our Balm of Gilead or Balsam (Picea Balsamea,) with a specimen at least of Scotch and Austrian Pines, both quite distinct in habit from either of the others. These are all of large growth and size. For smaller trees, which will admit of planting nearer the house, purchase Abies Alba, or European Double White Spruce, a beautiful tree of very compact habit, and peculiar tint, the unrivalled Deodar Cedar, Cryptomeria Japonica from Japan, proved to be entirely hardy here. There is nothing yet known we think to equal these two last. For evergreen *shrubbery*, to fill judiciously the smaller spaces, ask at the nurseries for English and Irish Yew, American Arbor Vitæ, Euonymus, American, Irish and Swedish Junipers, Thuja Plicata, a very beautiful species of Arbor Vitæ, also Mahonia, Tree Box, of which there are several species, all beautiful, and American Holly. The latter is somewhat difficult to plant, but is so beautiful in its green leaves and scarlet berries, hanging on all winter, as to pay well for extra pains and expense.

For deciduous trees, where a shade is wanted *very quickly*, nothing is so well adapted as Silver Maple, Silver Poplar and Pawlonia. These are very rapid growers, the Poplar however being somewhat objectionable from liability to sucker. This will not interfere with it for street planting. To those, however, who can afford to be somewhat patient and wait a little longer for more desirable trees, but slower growth, who will be satisfied with acquiring beautiful shade, at a pace of thirty miles an hour instead of sixty, we recommend, by all means, three species of Maple as not being surpassed by any other shade trees, Acer Saccharinum, (Sugar Maple,) Acer Platanoides, (Norway Maple,) Acer Pseudo Platanus, European Sycamore or English Maple. These are all of the very first class. Add to them, English Horse Chesnut, which, however, loses its leaves too soon and suffers rather much from hot weather, and Tulip Poplar, not half so much planted as it deserves, also the many beautiful species of ash, Magnolia Acuminata, Tripetala, and Macrophylla, the different species of oak much undervalued and very ornamental, also Tilia Americana, American Linden, Willows and Deciduous Cypress, European White Birch and Larches. For second size of Deciduous trees and shrubs obtain Rhamnus Carolinianus, a very showy tree, also Halesia or Silver Bell, Laburnum, Purple Beech, Judas trees, Rhus Cotinus or Mist Bush, Chionanthus or White Fringe, Dogwood, Double Flowering Apple and Cherry. Virgilia Lutea, Cydonia Japonica, Deutzia Scabra and Gracilis, Wiegelia Rosea, Ribes Sanguineum, hardy at Philadelphia, Lilacs, Spireas assorted a beautiful family of shrubs, a continuation of bloom being kept up all summer with the different species, Hydrangia Quercifolia, one of our most magnificent flowering shrubs, Euonymus Amer-

icana, Calycanthus, and a large number of others. We consider no lawn *perfect* without all these we have named. Their grouping and arrangement with proper taste will of course increase the proper effect.

We wish our farmers would not stint so much the space around their houses for ornamental purposes. A spacious lawn and grass plot in front of the dwelling well supplied with the above list of trees, we believe would often be worth $5,000 to the real bone fide selling value of the property.

We have known more than once such a lawn, well set with grass and tastefully planted, to be the means of selling many a farm and country seat. We would recommend it however not as a means of selling, but as an inducement for *keeping* a comfortable homestead, and fastening in the hearts of inmates both young and old, those endearing attractions, which should ever cluster around one's home and make it more beautiful than all other places. A healthful moral influence is often thus exerted, particularly on the minds of children of no slight importance. Again we say, *Plant, Plant, Plant.*

Reading's Corn Sheller.

In our last number we gave an illustration of this valuable machine, manufactured by Mr. Sinclair, of Baltimore. We have since learned that Mr. David Landreth, Sixth Street near Market in this city, has the sole ownership of the patent right for Pennsylvania, with the exception of four counties.

Grass Fields.

It is often a serious loss when fields in wheat the previous season, and seeded down with the view to remain in grass for several years, prove on examination, that the grass seed either from dry weather or other causes has very imperfectly taken.

The usual rotation, which requires each field to be plowed in its turn, or as it may be required, is seriously interfered with by such a mishap.

In these cases, we would advise a few quarts of grass seed to be sown to the acre on the surface, while the frosts of spring have left it comparatively open, and when the ground becomes dry enough pass over the roller. This will cover the seed, and very often cause it to grow and vegetate beautifully, avoiding the necessity of plowing up the field.

An Englishman's Method of Feeding Stock.

The following from an English Journal may furnish a hint to American farmers:

Mr. John Hutton, of Sowber Hill, near Northallerton, England, has been taking into hand, for some years, poor, wild, worn-out farms, as his tenants dropped, until he has about fifteen hundred acres or more, and has followed out the system of steam-boiling linseed and meal, combining this with chaff, and so feeding a large number of cattle. He has thus renovated the worn-out soils, and reduced the whole to a state of garden cultivation, combined with the successful feeding of prime Short Horn steers. A party of some 29 agriculturists lately inspected his farming operations, and the clean, healthy, and happy condition of 50 well fed Short Horn steers, ready for market, the sleek and almost fat condition of the straw fold or store cattle in his yards—many worse are sold for fat—the healthy condition of his draught horses, are evidencesof the value of linseed compound on which they are fed—the fat cattle to the utmost limit, and the store stock and horses once a day. To suit the expenses of the times the following is the formula of his feed, and as will be seen, the cost of feeding is at this dear season not more than 6*s.* per week:—

COST OF KEEPING A FAT BEAST FOR ONE WEEK.

April 18, 1854.	*s*	
26 lbs of meal at 1*d* per lb. - -	2	2
13 lbs. of Linseed at 1½*d* per lb. -	1	7½
Turnips, (from 70 lbs. to 80 lbs per day)	1	6
Coals - - - - - -	0	1½
Labor on each beast - - -	0	7
	6	0

The food given to the draught horse is 1 lb. of linseed and 3 lbs. of meal, at noon, at the cost of 4½*d* per day. The small quantity of roots per day—taking the minimum of 70 lbs.—would, in 20 weeks, amount to some 4½ tons only, thus finding all the roots necessary for feeding four cattle on 1 acre of a 20 ton per acre crop. —*Journal of the Chemical Society.*

The Guano Trade.

The very extensive increase in the use of guano, as a fertilizer of the earth, has caused the trade in it to become exceedingly important. The number of vessels that arrived at the port of Baltimore, the past year, loaded with guano was one hundred and thirty-five, mostly ships of the largest class. Assuming the freight paid to those from Peru, to be an average of twenty-eight dollars per ton, the freight money alone amounts to $1,625,000. The whole value of guano imported from Peru, at fifty dollars per ton, is $3,150,000, and that from other ports, at twenty-five dollars per ton, is over $255,000, making the value of the guano imported into Baltimore the past year, nearly three and a half millions of dollars. It is to be remarked that the largest import of guano has been into Baltimore, and without correct data, it is assumed that the quantity imported equals that of all other cities of the Union. At the close of the year, the supply is very large, being computed to be about forty thousand tons, or about half the whole import of the year. The market in the spring will therefore open with a stock sufficient to meet almost any demand, but in the meantime supplies are not expected to continue as freely as heretofore, as it is understood that but few vessels have been chartered to proceed to the islands within the past three months. We subjoin the import for the past year, and for several years previous:

Imports of Guano for 1854.—Peruvian, 58,927; Mexican, 6,613; African, 627; Total, 66,168 tons.

Imports of Peruvian Guano into Baltimore for six years. —1849 2,700 tons; 1850, 6,800; 1851, 25,000; 1852, 52,500; 1853, 32,152; 1854, 68,727.

Good Pen of Pigs.

Mr. John Stepleton, of Willistown, Chester county, slaughtered nine hogs about two weeks since, the weight of which were as follows:—439, 497, 431, 489, 435, 399, 434, 423. There have been few lots of pigs slaugtered the present season that can beat the above.

PENNSYLVANIA FARM JOURNAL.

VOLUME 5. PHILADELPHIA, APRIL, 1855. NUMBER 4.

Farm Journal Stock Register.

Since our removal to Philadelphia, we have had numerous calls from persons desirous of purchasing various kinds of stock, as to when and where they could be supplied. We have given all the information we possessed—often but limited. In order to meet these calls more satisfactorily, we have opened a Stock Register in our office in which we propose to keep a memorandum of all stock of whatever kind for sale, of which we may be informed; and also of all wants by persons desirous of purchasing. Breeders and others will benefit themselves, and facilitate sales, by leaving with us for entry, descriptions of animals they may have for sale, with price, &c., &c. No charges will be made for the entry.

For the Farm Journal.

Swiss Cows.

Of improved cattle the English races only are generally known in the United States. We hear only of Durhams, Devons, Alderneys, &c., as if England only, raised the best cattle in the world. With very expensive outlays, pure races are imported from Great Britain, and by crossing with them and great care in keeping, the native cattle are greatly improved. It passes, however, reflection and recollection that the English cattle have not only been gradually improved by great care, but that formerly England imported good cattle from the continent of Europe to improve their native breeds, as is now the case here with regard to English cattle. Holland, Holstein, Switzerland, Tyrol and Styria produced for a long time races of cattle that were far superior to the English. And why should such cattle not be imported directly now with us? When we reflect that from those countries, from Switzerland, better cattle, at one-fourth of the price of English cattle, can be imported, why is the attention of breeders not called to that fact?

Some years ago a trial was made in Maryland by importing cattle from Holstein, and we learn that at the South they are about to import cattle direct from Berne, Switzerland. Mr. Robert Nelson, a Dane, of Macon, in Georgia, is about leaving for Switzerland to purchase about twenty head of cattle for planters in Georgia and Alabama, and will execute more orders for them. He contemplates leaving in June, and later commissions can be sent him through the American Consuls in Basle or Berne. Mr. Nelson can purchase the best cattle there for $150, and land and sea transportation will cost about $200 more. A gentleman from Maryland, well acquainted with Mr. Nelson, thus speaks of him: "With regard to Mr. Nelson's adaptation for the undertaking, I have not the least doubt. I made his acquaintance last year during a tour in Georgia. I found him a thoroughly practical man, who possesses the fullest confidence of the most estimable and enterprising planters in this State."

The editor of the Cotton Planter visited Mr. Nelson lately at his nursery in Georgia, and expresses himself as follows about the Berne race of cattle as it was imparted to him by Mr. Laman, of Macon, entirely in accordance with Mr. Nelson's description. Mr. Laman says: "I am just returned from Europe, and in Switzerland I saw the Berne cattle, and found them far preferable to any of the English races with which I am acquainted. The Berne cows are undoubtedly the finest in the world." He says further: "On board the Asia, in which I returned from Liverpool, there was a fine Durham cow to be delivered at New York for £200 sterling, or $960, and I have seen many a Berne cow near Berne, which I would not give for two such Durham cows." Mr. Laman is a gentleman well known in Georgia.

The following is Mr. Nelson's account about this race:

"I must remark that my father has carried on husbandry and cattle raising for fifty years with the greatest care, if not more extensively than any body else on the continent of Europe; further, that I have been regularly trained to that business, and had assisted him many years, until political affairs compelled me to emigrate to the United States.

"For many years we tried all the highly extolled English races, such as Durham, North Devon, Ayrshire, Alderney, and others; the result was we discarded them all and tried the Swiss race. When in 1825 I travelled through Europe to see and learn as much as possible of all that belongs to husbandry and cattle raising, I brought home to Denmark several kinds of Swiss cattle, such as Switz, Fribourg and Berne. The last showed itself the most preferable with regard to milk as well as meat. They are large, extraordinary milkers, and very gentle. As certain characters wanted to show their conceited knowledge by finding fault with all new undertakings, many prophecies were made about their inaptness for our climate, but they all proved false, for when these cattle were kept on the same pastures and in the same stables with our own, and had the same feed, the result was entirely in their favor; and as it is generally known that individual cows, or individual races, give much better milk than others, the milk of the Berne cows was by

far the richest. The farm on which they were kept had a very dry, sandy and gravelly soil, such as that of the Pine woods in Georgia. It might be remarked that the climate of Georgia is warmer than that of Switzerland. I must say, thereupon, that the dairies in Lombardy and Italy are always stocked with cows from Berne, which thrive as well in those southern latitudes as in the cold climate of Denmark. The finest cattle are found in Emmenthal, Haslithal and Oberimthal. For more than five centuries the Swiss have given to the raising of cattle their full and whole attention, as the only source of their existence; and while it can be justly said that some English races are artificially good, it can be said with a certainty of the Berne race that it is good from its nature, and also of its continuance, which is very important for a cattle raiser or dairyman.

"For fifteen years I have examined from 200 to 300 Bernese cows, and am, therefore, so convinced of their preference to all other races for Georgia, that I will be glad if any body will send me more information from certain sources, as it will show I have not said too much in their favor; and although I am well acquainted with all the other races of the continent of Europe, still I would not recommend them for Georgia, as they are not suitable for us."

Thus far what is said of the Swiss race is true with regard to their milk giving, and the good quality of their meat; but the males or oxen of the same race are unfit for beasts of labor, being too slow and indolent in their nature, which is derived from their nervous constitution as well as their conformation.

Their height is about four feet ten inches to five feet in the two sexes; the males and females do not differ in the size of their bodies; they weigh not less than 1000 to 1200 lbs. each; the skin is mottled with black, white and red, the latter usually predominating on all parts of the body, except the head, which is generally white; this part is short and large; the cleft is thick and large; the dewlap is loose and hangs low; the body is massive; the belly very large; the head of the tail very high; the extremeties and the hoofs particularly do not show a conformation and strength to support easily such a heavy mass, which imparts to them a slow motion, badly fitting them for work. The cows have enormous udders, out of which commonly flow from twenty-four to thirty quarts of milk per day. This race, however, are great consumers; habituated to the luxuriant Swiss vallies, they cannot be maintained but on rich pastures, or stabled with abundant fodder. F. A. N.

Third month, 1855.

For the Farm Journal.

Compost.

A few years ago I had a quantity of rough straw manure in my barn-yard, and having no ground upon which I cared to put such stuff, I thought I would try an experiment with it. The first thing I did was to plow a few shallow furrows in a good sod on the side of a road in a lane. I then had a load of this barn-yard litter brought and thrown down on the sod where it had not been plowed, and spread to an extent of about ten by twenty feet. We next brought a load of lime, and spread it all over the manure; and while the wagon went for another load of manure, we covered the lime with a layer of sods, perhaps to the amount of a wagon load. Thus we went on with as many covers of manure, lime and sods, as we could heap on, and finished by covering all over with loose soil. We then made another similar heap, which used up all our materials.

This was done in May or June. The following April we opened our compost heaps. The whole mass was like bone ashes, and in the cavities, the nitre evolved in the process of decomposition was deposited or precipitated in great abundance, and had the appearance of heavy white frost. We spread it at about the rate of two hundred bushels to the acre on a piece of ground that had been severely cropped for thirty or forty years without manure, plowed it in, and planted corn. It yielded fully one hundred bushels of ears to the acre, and subsequent crops have abundantly attested the value of that manure. The decomposition appeared to be perfect, and at the same time the volatile salts (the most valuable part) were absorbed or condensed by the earthy matters, with which the animal and vegetable ingredients of the mass were incorporated.

Muck or swamp mud would be better than sods where it can be obtained. In the compost of which I have spoken, the lime did not form more than one-fourth of the weight of the masses—in bulk much less. It was fresh, and for several days the heaps were warm and sent off a little steam. J. C.

Armstrong county, March, 1855.

Rape.

J. LACEY DARLINGTON:—In the last two numbers of the Farm Journal, I observe a communication concerning "Rape," signed F. N. Nauts, which holds out strong inducements for farmers to engage in its cultivation. According to his statements, seventy dollars an acre can be realized even from a minimum crop. That will do very well, even at the present time, when corn and wheat command such high prices; and if the crop of rape should be a good one, the proceeds would be double that amount.

A communication from the same correspondent appeared in the July number of 1853 of a similar character, and I have been looking for some account of the experience of those who were induced to go into the business of raising rape; but as none has appeared, I offer the following relation of a very small experiment made by myself.

In the spring of 1853, I received a package of seeds from the Patent Office, and in it was a paper of rape seed. The seed was planted carefully some time in June, and not long afterwards the communication above referred to appeared, which induced me to bestow extra care on my rape patch. It came up and grew luxuriantly, and in the fall a piece of ground was prepared, and a large portion of the plants were transplanted according to directions, and some were left standing where the seed was sown. Although the weather was dry, the moved plants took root and grew, and as every thing in the experiment thus far appeared so favorable, I began to indulge in rather extravagant dreams about the money I should make in raising rape; in fact quite an air castle was erected.

The winter passed; and in the spring I went to look

after my rape, when lo! not a single plant had survived the winter! Thus my fair proportioned castle vanished into nothing.

However, I observed that poultry were very fond of the plants, and probably a patch might be sown with profit for turkey pasture, and as the plants late in the season are profusely covered with lice, this mixture of vegetable and animal food might cause Shanghais to lay, and eggs are mostly high in price at that season.

But I do not consider the result of my experiment with rape seed as conclusive against the possibility of raising it. Something may have been wrong either in the seed or in some other way, and I would be willing to try a small quantity again, but not "an acre or more."

It is singular that a crop which is cultivated with so much success in Belgium, France and England, has never become a profitable crop in the United States. If it will succeed here, surely the agriculturists of this country are not so stupid as to be unable to perceive its importance.

In the September number of the Farm Journal, 1853, in an article headed "Poppy," and signed F. A. Nauts, it is stated that so long ago as 1822 or 1823 an Englishman in Salem county, N. J., sowed rape on two acres of ground, and under very unfavorable circumstances realized $156 from the oil alone obtained from forty bushels of seed that his two acres produced.

Now, I have often wondered if rape generally produces so well in this country, why that Englishman did not continue to raise it, why his neighbors did not imitate him, and why the cultivation of rape did not become common throughout the country. N. L.

West Fallowfield, 2d mo. 15th, 1855.

Domestic Recipes.

Indian Puffs.—Boil a quart of milk; and when it has come to a boil, stir into it, gradually, eight large table-spoonfuls of Indian meal; four large table-spoonfuls of powdered sugar; and a grated nutmeg. Stir it hard; letting it boil a quarter of an hour after all the Indian meal is in. Then take it up, and set it to cool. While cooling, beat eight eggs as light as possible, and stir them, gradually, into the batter when it is quite cold. Butter some large tea-cups; nearly fill them with the mixture; set them into a moderate oven; and bake them well. Send them to table warm, and eat them with butter and molasses; or with butter, sugar, lemon-juice, and nutmeg stirred to a cream. They must be turned out of the cups.

Sumach Ink.—The milk or gum that exudes from the sumach is a good substitute for durable ink. Break off the stalks that support the leaves. Squeeze them into a cup, and write with the liquid. Expose it to the sun and it will become a fine black.

To Clean Looking and Plate Glasses.—Take a newspaper, or a part of one, according to the size of the glass. Fold it small, and dip it into a basin of clean, cold water. When thoroughly wetted, squeeze it out in your hand, as you would a sponge; and then rub it, hard, all over the face of the glass; taking care that it is not so wet that the moisture will stream down the glass. After the glass has been well rubbed, with the damp paper, let it rest a minute. Then go over it with a fresh newspaper, (folded small in your hand,) till it looks clear and bright; which it will, almost immediately. Finish with a fresh piece of newspaper, thoroughly dry.

This method, simple as it is, will be found, on trial, the best and most expeditious way of cleaning mirrors, or any plate-glass; giving a clearness and polish, that cannot be so soon produced by any other process. The inside of window-panes may be cleaned in this manner; the windows having been first washed on the outside. Also, the glasses of spectacles, &c. The glass globe of a lamp may thus be cleaned with newspapers.

The efficacy is attributed to the materials used in making the printing-ink.

To Destroy Bed-Bugs.—Among the numerous ways of destroying bugs, there is none better than to wash carefully, with a solution of corrosive sublimate in spirits of wine, all the cracks and crevices of the bedstead, at least once a week; taking care to throw out directly whatever may remain in the bowl or saucer, which should at once be washed clean in hot water.

Mercurial ointment, rubbed once a week into all the joints and crevices of the bedstead, is an excellent destroyer of bugs. It can best be rubbed in with the finger. Leave it on the bedstead without wiping off; and do not put on the bedding till evening.

Seedling Apples.

Mr. Editor:—Being a reader of your Journal, I frequently see notices of fruits; some of which are new, but supposed to coutain valuable properties, and consequently worthy of cultivation to some extent, at all events.

In the following I will give you a description of two varieties, one of which is cultivated to a considerable extent in this county, and seldom found out of it. The other I found last summer growing in an orchard in this vicinity; it is a seedling, and has never been cultivated anywhere, nor propagated, except by some neighbors, who have engrafted it on old stocks, &c.

The first one we call the "Ewalt," deriving its name from the owner of the farm on which it originated, one and a half miles from Bedford. In size one of the largest weighing over one pound in good seasons; greenish yellow, with a bright red cheek in the sun; rather acid, but with a sprightly flavor, excellent for desert and cooking in the spring of the year, say March and April; tree, a strong and rapid grower, forming a dense head, (in fact, I cultivate none in my nursery that grow more vigorous and beautiful,) with a dark green foliage; is highly esteemed here by a great many good judges, especially in the spring, and withall bearing immense crops on all soils and situations.

The second is a yellow autumn apple, ripe in October, of a very large size, and of a sugary, sweet, tender and delicious flavor, very valuable for cider, apple butter or drying, &c. The gentleman on whose farm it is growing told me he had known it for twenty years, and the fruit is always large and fair, and that the grafts set on old trees grow with an uncommon rapidity. No name has been given it yet.

If you think, Mr. Editor, these few lines will be of

any service to your numerous readers, I shall be amply satisfied for the little trouble it has given me, as I am anxious to have brought before the public such native fruits as are to be found in our county, some of which will be a valuable acquisition to our stock. Yours, &c.

Bedford March, 1855. J. M. L.

Was it a Mole? Or a Shrew?

EDITOR FARM JOURNAL:—The common mole of our country, Scalops aquaticees *Linn*; is classed among those small animals, by naturalists termed *Insectivorous*; from the fact of their subsisting on insect food, when it can be procured. Their character is not, however, entirely derived from observations made upon their habits—it is also inferred from the structure of their mandibulary organs.

The teeth of some animals are furnished with broad, flat, surfaces, cut into *ridges and hollows*, and the inferior jaw provided with a *lateral motion* by which arrangement, vegetables and grains are ground, somewhat in the manner of corn in the mill. They are called *Herbivorous animals* (from herba and voro,) herb-eaters.

In others, the teeth present a number of broad, lancet shaped, projections; which with the vertical motion of the lower jaw, are admirably adapted to the purpose of cutting flesh; after the fashion of a modern sausage cutter. They are called *Carnivorous animals*, (from caro and voro,) flesh-eaters.

Again, we find another set of animals, whose teeth do not present the grinding surfaces of the one, or the trenchant edges of the other, which has been mentioned but are studded over with sharp, bristly, points suited for seizing, and masticating, insect food. They are called *Insectivorous animals*, (from insect and voro,)—insect-eaters.

The mole as already stated, belongs to the latter class. Its habits, when carefully studied, seem well adapted to this mode of subsistence. Thus, it forms numerous and very extensive subterranean passages; it does not burrow deep into the earth, but keeps near the surface, and among roots of grass, &c., where the insects, and especially their larvæ, most abound. Another trait of his character is that he industriously traverses his roads back and forward, from morning till night, and, may be during the night also. Now it is not to be supposed, that his sole object, in burrowing is to obtain whatever insects may fall in his track. If so he would continue to open new grounds. No! led by that unerring *instinct*, with which he has been furnished by an All-Wise Creator, he makes his burrows thus extensive, for *pitfalls*, and visits them thus frequent in order to secure the insects, which may have fallen therein. Doubtless, he greatly prefers insect to vegetable food, and were the former always abundant, might reject the latter altogether; but where the one fails he is so far *Omnivorous*, (from omnis and voro) all-eater; as to partake, without scruple of the other. Hence, both garden and field crops, are liable to injury from his depredations upon seeds and roots.

I am aware that some charitably minded persons;—generous to a fault;—relying upon his insectivorous teeth;—deny the charge, and accuse his accusers with being guilty of a gross libel upon his character. They say that he is one of the husbandman's best friends; that so far from injuring the crops, he merely feeds upon the insects which would otherwise have done them an injury. The real injury, they say, is done by *shrews*, (Soux) and *ground mice* (Awicole) which avail themselves of the burrows formed by the mole, to gain access to the under ground products of the farmer, and gardener. This I believe is sometimes the case, but not always. The most cunning, and adroit, pilferer will sometimes be detected when he feels most secure. So it was in the case which I am about to relate.

My garden is partly surrounded by woodland, and partly by grass plots, and as might be expected, has long been infested with moles; every year increasingly so, till it became difficult to obtain a crop of almost any kind. The larger seeds were eaten, as soon as planted, the smaller ones destroyed while germinating, by the displacement of the soil. Last season I planted peas three different times, and in as many different places;—they were only given to the moles, or to the shrews, or to the ground mice. Which?—let me tell the reader. I had by this time, lost my wonted equanimity, and resolved upon punishing the *varmints*. To do this I mixed a few grains of arsenic with flour, and then rolled a dozen soaked peas in the mixture while they were wet. Thus armed I went into the garden, and made a hole with my finger, into the *moles track*, in two places, where they had long preserved a thoroughfare across the walk. Into these holes I dropped my peas.

The moles, being *insectivorous*, would of course, pass by the poisoned bait; but the shrews, and mice, being *herbivorous*, could not be expected to resist the temptation,—so read the book. The result was that from that time forward, there was not the sign of a mole seen in garden for four months. The *moles* did not open any new burrows, and the *shrews and mice*, could not do it for themselves, so my next planting of peas escaped their depredations. E. M.

Farm Lawn, 27th, 1st mo., 1855.

[The hint contained in the last paragraph is among the best we have seen, for the destruction of moles. Dr. Emerson, in his Encyclopedia, mentions the use of shreds of lean beef, poisoned with arsenic or strychnine; but unless the moles find it soon, the beef becomes tainted, and seems unpleasant to the delicate taste of the mole.]

More Durham Stock for Chester County.

We lately had the pleasure of examining at the stables of our friend A. Clement, in South street below Ninth Philadelphia, a very superior Durham Bull calf some three months old; purchased by him of L. Spencer, New York, for Paschall Worth, near West Chester, Chester county, Pennsylvania, and then on his way to the farm of the latter. If we know any thing about stock, we should pronounce this calf, giving promise of perfection, as he does, in nearly every valuable point, to be one of the best animals ever brought into Pennsylvania, and should nothing happen to him, he will add greatly to the reputation of Chester county, as containing the best stock in this state, and be of vast advantage to her breeders.

We have obtained his pedigree and insert it below. It traces from the very best blood in England. His present owner has concluded to call him Duke Athol 3d.

Duke of Athol 3d., was bred by L. Spencer, New York; color red, with very little white. Dam Faraway (imported,) by 3d duke of Oxford (9,047), g. dam Felicia, by

4th duke of Northumberland (3649), gr. g. dam Fanny by Short Tail (2621), gr. gr. g. dam Flecker 2d by Belvidere (1706), gr. gr. gr. g. d. by a son of young Wynyard (2859), by S. Brown's Red Bull (97), sire of the calf. Duke of Athol 2d was calved September 20th. 1849, and bred by the Executors of the late Thomas Bates, England, and now the property of L. Spencer, West Chester Co, New York, got by second Duke of Oxford (9046), dam (Duchess 54), by second Cleaveland Lad (3408), g. d. Duchess (49), by Short Tail (2621) gr. g. d. Duchess 30th by second Hubback (1423), gr. gr d. (Duchess 20th), by the 2nd Earl (1511), gr. gr. gr. g. d. Duchess 8th, by Marske (418), gr. gr. gr. gr. g. d. Duchess 2d by Kelton 1st (709), gr. gr. gr. gr. gr. g. d Duchess 1st by Comet (155), by Favorite (252), by Dairy Bull (186), by Favorite (252), by Hubback (319), by Mr J. Brown's Red Bull (97).

Col. Ware's Cotswold Sheep.

Having heard much of the celebrated flock of improved Cotswold Sheep of Col. Ware, of Clarke county, (Va.,) we asked him for some account of them. In connection with his answer which we publish below, he sent us some beautiful specimens of wool, and a printed circular, from which we learn he has added to his flock for six or eight years past, by annual importations of the best to be procured in England, obtaining in several instances, animals which had received the first prizes at the exhibition of the Royal Agricultural Society:

Luther Tucker, Esq.:—In compliance with your request, I send you this notice of my sheep. I had a flock of good sheep, but found, besides the fleece, each sheep at 4 years old on grass, would not command more than $2.50—the best, fed on grain in the winter, would bring over $4.00. To supply a butcher each year a lot of fat sheep of a farmer's own raising, would require him to keep 4 lots on hand to sell one, the fleece but little more than paying for the keep. To rely upon a fleece alone for profit was too insignificant a matter. At the highest price per lb. given in the U. S., it would require too many sheep to make a small sum of money. Not being satisfied with this state of things, I determined to purchase some of the large mutton sheep of England, the improved Cotswold, and try what could be done with them; and as independent of the pride, I believe it the true policy to have the best as it soonest returns the outlay, I imported, and I do import each year winners of the high prizes of the Royal Ag. Society of England. If they beat England, I must surely have the purest breed and best.

I soon found, after putting 3 crosses of my imported bucks on my ordinary flock, that the fleece greatly increased in weight, and sold for as much per lb. as the fleece of the ordinary sheep, and I sold the mutton from these crosses (not thorough bred) without difficulty, the fall after one year old, for $10 each on the farm, so that I sell out clean every year, keeping none over the winter but the breeding ewes and the lambs of the same spring.

You will see from my circular sent you by remarks of others about my sheep, that I have sold some mutton for $35 and $25 each, and you will see from the no. of lbs. of washed wool to the fleece, that we make more money to the fleece than any other breed. I send you samples of wool—the longest is from a fleece of 18¾ lb.—the next 17½—the next 16—the next 14, the growth being from the shearing of 1853 to that of 1854. All is not so long. I have had it longer. I always wash my sheep before shearing, but admit that the flock from raising lambs and losing some wool, average only 6 lbs. washed. We never sell under 30 cents per lb. and sometimes get 40, and you will see we still make as much money or more to the fleece than any other breed. Selling out clean every year enables us to keep all our sheep of the most profitable size—ewes that bring us lambs every year (and being prolific mostly bring twins and wool too). We are never overstocked. The butcher is always ready for the overplus.

I consider the improved Cotswold the most profitable sheep for general farming purposes (wool and mutton), for while I formerly sold one mutton 4 years old for $2.50 on grass, and $4 on grain in the winter, in the same time, besides getting more money for fleece, I sell 4 of this breed for $40; and that profit is in that proportion, allowing that each bring the same no. of lambs,* for I never sell one of them the fall after one year old for less than $10 each, part bred at that—butchers have offered $6 and $8 cash for some lambs and been refused. The thorough bred are too much in demand, and too costly to alter.

Seeing these results, naturally the farmers in this section have occasionally procured of me rams, and improved their flock, until this little county of Clarke that I live in, has now a reputation probably unequalled by any State in the Union. Is it not the true policy of the farmer to keep that breed which will produce the greatest amount of money from the smallest number? It is not unusual in this county, for a flock of from 40 to 50 ewes, part bred, to yield in mutton and wool each year from $500 to $650.

I know it is a theory with some that these large sheep require more food to sustain them than the small breed. Some say double. My experience is the reverse. I cannot, nor can any person else, form any correct idea of the fact on grass, but nearly correct conclusions can be arrived at when you feed them on grain for the butcher. In this way I have tested it. I have, beginning at the same time, fed a lot of ordinary sheep 4 years old, the pick of 700 good ones, and a lot of yearling Cotswolds, the same number in adjoining fields, the most indifferent field to the Cotswold—the same amount fed at the same time to each lot. The former always eat up clean, and wanted more; the latter always left some, and were sold January 1st, rolling fat, for $10 each; the former not until some time in March; then with difficulty and grumbling by the butcher for $4 each, having the advantage of the others also in age. I have come to the conclusion that at least 2 (I believe 3) Cotswolds, even yearlings, can be fattened well for the butcher on the grain it takes to fatten one of the others of any age. The Cotswolds have great propensity to take on fat, are always mutton. Indeed you cannot lay the fat on any other, as you can on them. It is their nature. All others travel a great deal, and ramble off their food. The Cotswolds are heavy, sluggish sheep, fill themselves and lay down and ruminate like cattle,

and thus convert their food into fat, instead of rambling it off, and it is to this sluggish quality, I ascribe the fact that I have never lost a thorough bred by dogs; they do not jump up and run when any thing comes into the field, thus tempting dogs to the chase. They are large sheep; have been brought in England, by full treatment at 3 years old, thorough bred, to nett for the butcher over 300 lbs. Can any other breed of sheep give from $2 to $5 in fleece in the spring he is one year old, and in the fall of the same year without fail $10 as a mutton, and draw butchers hundreds of miles to get them at that, as they do here every year? can cattle do so? and they have no fleece. Can they give $10 even the fall after one year old? and they consume infinitely more per head. Then what animal can be so profitable to the farmer as the Cotswold sheep for general farming purposes, returning its outlay with such certainty, so speedily and so unceasingly? JOSIAH WM. WARE.

Near Berryville, Clarke co., Virginia.—*Country Gentleman.*

* "11 ewes brought 28 living lambs—5 of the 11 brought 16 lambs—one of the 5 brought 4—the other 4 brought 3 lambs each."

Agricultural Enthusiasts.

Every profession has its enthusiasts; and agriculture in all its departments has them in abundance. Of those who are especially interested in *cultivation* we have teachers of deep and of shallow culture—of tilth without manure—and of manure applied in the liquid form, or as top-dressings in the solid form. In other divisions of the subject we have devotees of plant improvement and animal improvement. Poultry has absorbed the whole regard of many; and there is many an ill cultivated farm occupied by men celebrated as breeders of stock, to prove that it also too exclusively engages all the energy of the tenant. Agricultural improvement owes a great deal to enthusiasts. It makes progress piecemeal in the hands of those who are thus interested in but pieces of its whole extent. If it had not been for BAKEWELL, and for COLLINGS, the one giving a lifetime to the improvement of the sheep, the other to the improvement of the Teeswater breed of cattle, not only would sheep and cattle not have been what they are, but British agriculture generally would not have attained its present powers as food supply of more than 20 millions. Amateurs as well as farmers may therefore all feel well disposed towards agricultural enthusiasts.—*London Agricultural Gazette.*

Diseases of Horses.

SLEEPY STAGGERS.—This disease is named *sleepy* from the fact that its most characteristic sympton is that of *coma* or *somnolency*. The subject may be surrounded by all the noise and confusion of a city stable, yet, in the midst of this, and at any time, day or night, will fall fast asleep with his mouth full of fodder. On arousing him, he evinces some alarm; yet almost immediately, and while standing by his side, he is off into what appears to be a sound nap.

There are other features in the case that enable the observer to make out a diagnosis, such as *stertorous* breathing; slowness of respiration; slow, soft pulse; *amaurotic* eyes (generally closed); the head either drooping or pressed forward into the crib. In most cases the excrement is hard and knobby; the urine scanty.

The disease probably originates in derangement of the stomach and its associate digestive organ. It is very apt to terminate fatally, either from effusion or extravasation.

Treatment.—Here we are at fault, not having been very successful in bringing such cases to a favorable termination. We remember one case, however, that was considered hopeless; and by way of experiment we administered the unwarrantable dose of half a pound of lobelia, expecting at the same time that it would cause his death; but, contrary to our expectations, he recovered. The remedy was followed up by stimulating injections and cold water bandages around the head.

The lobelia seemed to have no other effect than to produce profuse perspiration, and this suggested the idea of placing such patients in a vapor bath—an idea that we have not yet been able to carry out. There is no doubt, however, that nauseating medicine, in conjunction with the warm bath, will do as much to relieve congestion in the horse as they have accomplished in human medicine.

If we had nothing but simple congestion to contend with in the treatment of this malady, our success would be more certain; but cases now and then occur when some morbid change takes place in the structure of the brain, so that our treatment avails nothing. The treatment most likely to succeed in a *curable case* consists in the administration of nauseating medicines. One drachm of lobelia, with half the quantity of bloodroot, may be given in warm water every hour. A dose of cathartic medicine should be administered in the early stage of the disease, followed by injections of salt and water. Counter irritation may also be of service when applied to the extremities.

Cathartics and nauseants must be our *sheet anchor*, and should be repeated until a free evacuation has taken place; for they have a tendency to lessen the force of the circulation, and consequently relieve the brain. The author is well aware of the difficulty encountered in administering medicine to horses laboring under disease of the brain and its investing membranes; the danger too, both as regards the person of the physician and the life of the patient, must be taken into consideration; for there are times when the patient is unable to swallow, and if we should then insist on forcing down a drench, a portion of it might enter the air passages and choke him. The attendant is at times in danger of personal injury from the animal's suddenly falling; but these suggestions apply more to those forms of disease known as inflammation of the brain. —*Dr. Dadd.*

Guano for Spring Crops.

As to the *profit* of the use of guano, several preliminaries are to be taken into consideration. Its cost compared with other manures, the character of the soil to which it is to be applied, and the prices commanded by the article to be produced, will decide this question. When good barn-yard manure is readily available, an amount expended in its application will probably give a return more profitable than the same sum in any other fertilizing substance. As to soils, the effects of guano are most marked and profitable on those badly worn and

exhausted. This is so because the materials it supplies most abundantly are there most deficient. Very poor land brought at once to fertility shows a change so great as readily to be noticed, while a fair medium soil, coming up to the same point, will attract little attention. As to kind of soil, those of a sandy and loamy nature, and well-drained clays, show the effects of guano, as well as those of all other manures, longer and more visibly than those of a contrary character. As to prices of products—guano can be used profitably on the wheat crop while that grain sells for $2 per bushel, but not when it brings but $1. Corn at $1, and potatoes above 50 cents, will warrant its use in their production. That is, the increase in the crop at these prices caused directly by this manure, will pay all the expense of its application, and leave a profit besides.

Quantity and manner of application are the subjects of the second query. From 150 to 300 lbs. per acre may be used, according to the quality of the soil. In applying it broadcast, it was formerly the practice to mix with it about one-quarter its weight of plaster, and, pulverizing the whole finely, to sow it evenly and then harrow, cultivate or plow it in, as soon as possible. This should be done immediately before sowing. At present it is generally recommended to pulverize and sow without any mixture of plaster. The great fertilizing principles of guano are the phosphate of lime and ammonia, the latter very volatile in its nature. Hence the necessity of applying it unchanged to the soil, to give forth to the growing plant, and not to the passing winds, its valuable properties. In applying it to corn and potatoes, it is generally planted with the seed, but great care should be taken that it does not come in contact, or it will destroy its vitality, otherwise it could be dropped with a machine at the same time with the corn, as our correspondent proposes. Ashes or lime should never be mixed with guano before its application to the soil.

"Where and at what price it can be obtained?" will be answered by consulting the advertising department of almost any number of this paper. We believe the price at present is about $55 per ton. In conclusion, allow us to remark that we shall be glad to publish accounts of experiments in the use of guano on any of the crops mentioned above, particularly if they furnish data for calculating the *profits*.—*Rural New Yorker.*

Resuscitating Fruit Trees.

A correspondent in the Germantown Telegraph gives the following statement of an experiment in resuscitating an old apple tree:

"On my farm there is an apple tree of very large size, standing by the side of the road, but some two rods within the line of the fence, and in lands that have been cultivated regularly, either in roots, grass, or grains, till within a period of twelve years, when a change in my field operations, induced me to turn it out to pasture. Some twenty years since—and about six years before I became acquainted with it—this tree rather abruptly ceased bearing. Its age at the time was unknown. Thinking that it might be resuscitated, I commenced the undertaking by digging around the trunk to the distance of the longest limbs, and to depth of one foot, inverting the sward, and placing it over the roots, and in immediate contact with them. On this sward, I sowed quick lime, wood ashes and gypsum—one bushel of each being used—and covered it with chaffed oat straw to the depth of two inches, when compressed; fine soil was then thrown on till the excavation was nearly filled; after which a cart load of fine compost was dumped on and evenly spread over the whole. The dead limbs were next cut out, and the top reduced to one-half its former size. The cavities caused by the falling off of old and decayed limbs, two cases extended nearly to the centre of the trunk, were filled with "Forsyth's Cement," and all the limbs which could be reached, or safely got at in any way, were scraped and washed with suds. This work was performed in the spring of 1850. The next year the tree blossomed, and produced a few apples, which matured. The next season, the bearing was abundant, and since then, it has not ceased to produce a good crop."

New Rochelle Blackberry.

In an age of humbugs, when "Sarsaparilla Palaces," "Barnum Biographies," and numerous other nostrums, bear abundant evidence to the *gullibility* of our people, it is really refreshing to see *some new thing* that is *not* a humbug. Such is the New Rochelle or Lawton Blackberry, the origin of which is related at page 217 of our third volume. It is really a mammoth blackberry, of delicious flavor, entirely distinct variety, and worthy of general cultivation. The high price, $6 per dozen plants, at which they are at present offered, being entirely beyond the reach of *editors*, we can only recommend our *friends* to purchase, believing fully there is no deception this time. We have never yet had the opportunity of tasting them, but look forward to the time with no little interest when they shall be as plenty as other "blackberries," when there will be a chance even for editors.

Why do not our farmers devote some attention to blackberry cultivation? We believe it would be very profitable. There is hardly a more useful and wholesome fruit than blackberries for both summer and winter. We have never yet known the market overstocked with them. Let any farmer select an acre of good, clean, mellow ground, mark it out in rows four feet apart, and plant it with good strong plants from his thicket, and we believe it would pay him *better* than any acre under ordinary farm culture, if he was within reach of market. The canes should be trimmed like raspberries, and the rows kept clean by the constant passage of the cultivator. The blackberries would be found to improve greatly in size, and also in abundant bearing. We hope some of our readers will try it, and send us the results.

Hedges.---Osage Orange.

Public opinion throughout the country seems to have settled down upon the Osage Orange, as *the* hedge plant for the United States, at least south of New York. It is *hardy*, grows fast, with proper management becomes thick and impenetrable to stock of every kind, does not sucker, is highly ornamental, and, as we have frequently before urged upon our readers, possesses every requi-

site for a *protective* hedge. In our present number will be found some practical remarks on the Osage Orange by Dr. Warder, before the Philadelphia Society for Promoting Agriculture. The experience in the region of country around Cincinnati and west of it, where hundreds of miles have been planted successfully, entitle his remarks to great attention. We do not see why every hundred acre farm should not have an Osage Orange hedge on all its outside boundaries, especially along roads. The first cost and subsequent contingent expenses of ordinary fencing have been so long considered among the *necessary* expenditures of the farm, that we lose sight of the enormous outlay they require. Estimating a hundred acre farm to be divided into ten fields, each enclosure would require about one hundred and seventy-five panels, which, at eighty cents per panel (a moderate estimate), amounts to one hundred and forty dollars, on which the yearly interest is eight dollars and forty cents, or about eighty-four dollars on the farm. On an average of from twenty to thirty years this fence would require renewal, at a cost of one thousand four hundred dollars. This is money positively sunk, to the owner of the land and the country, to say nothing of the time and expense of repairs. Nicholas Biddle once remarked that the cost of fencing in Pennsylvania was sufficient to pay the State debt—forty millions.

In the rich land and deep soils of the west, Osage Orange hedge will grow large enough for protection in three to four years; here more time will be required, but depending much on the manner of planting and management. Plants one and two years old can be bought at the nurseries at from $6 to $10 per thousand, and the seed at about $1.50 per lb.—a pound will contain some thousands of seeds.

In the third volume of the Farm Journal, page 216, our readers will find minute information about the management, planting, &c., of Osage Orange, with an engraving representing the proper mode of trimming, &c., and we recommend the subject to their earnest attention. In our advertising pages will be found proposals for planting and setting the hedge.

WAKEFIELD'S HAND CORN PLANTER.

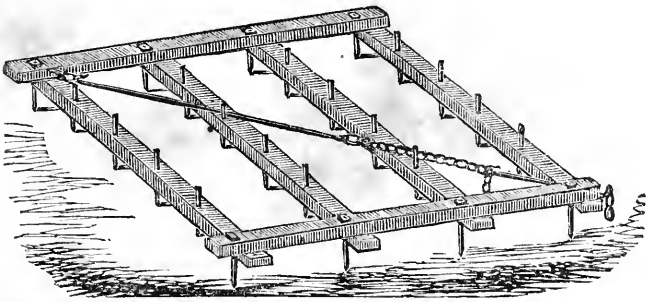
This implement is designed for planting corn, broom corn seeds, beans and similar seeds. It is carried and used (as represented in the above engraving) as a cane or walking-stick; requiring no delay and no additional motion or effort. Is adapted for planting in rocky and uneven ground, and in all kinds of soil, is easily adjusted to plant at any desired depth, and to drop any required number of seeds in a hill.

We have not had an opportunity of witnessing the operation of this machine in the field, but judging from a somewhat minute examination of its parts, we can see no reason why it should not do all that is claimed by the patentees in the following extract from their circular:

"The method or mode by which the seed is planted with this planter is new, and it is believed possesses advantages over every other, not only in facility of use but in hastening germination. The seed is forced by pressure obliquely from the surface of the ground to the required depth, thus ensuring the immediate absorption of moisture, by bringing it into perfect and hard contact with the soil under and around it, while the earth falling loosely over, cannot obstruct the coming up and growth of the blade.

"The planter is simple in construction—not liable to

get out of repair. Weighs about seven pounds. Costs the farmer only five dollars, which price he can afford to pay, if used only for planting in a common garden. With this implement one acre of corn can be planted in the most perfect manner in one hour." Orders for single machines may be sent to Wakefield & Vining, Plainfield, Mass. Further information relative to rights, &c., may be had by addressing the same persons.

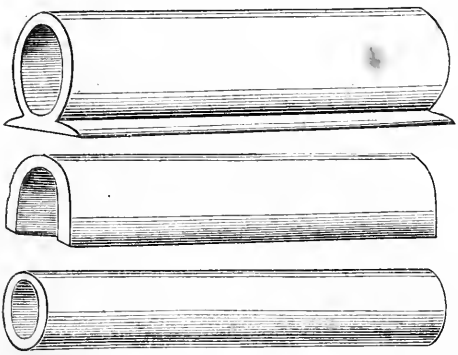


EXPANDING AND REVERSIBLE HARROW.

Many of our readers are doubtless familiar with the harrow represented in the above engraving, but as others may never have seen it, we thought best to introduce it at this season, when such implements are most in request.

As will be seen at a glance, this harrow is so constructed as to be widened or narrowed at pleasure, so as to do coarser or finer work, by shortening or lengthening the chain on the top.

BENEFIT OF DRAINING.



The above engravings represent the three varieties of draining tile in most request. In order to show what has been done by these tile, &c., we copy the following letter from a printed pamphlet, which has lately been handed us, on the benefits of land-drainage, by John S. Hilles.

He has commenced the manufacture of draining tile, at Wilmington, Delaware, and will shortly be able to supply all the different varieties of Sole, Pipe, and Horse Shoe Tile, as stated in his advertisement on our cover.

The pamphlet states that samples of his manufacture may be seen at P. Morris & Co's Agricultural Warehouse, Seventh and Market streets, Philadelphia, who are agents for the sale. He has issued a large number of the pamphlets for distribution, containing the most satisfactory references, as to the use of the tile, and also numerous cases similar to the letter below, of the satisfatory results of draining. The subject is one of great importance. It will be observed that C. P. Williams' land was not *springy*, but the clayey substratum prevented the surface water from passing off, and retained it to the great injury about the roots of plants. How much of this kind of land there is in this State, which would be equally benefited in addition to others decidedly wet from springs. We anticipate a large demand for the tile in this section of Pennsylvania, as it has heretofore been impossible to obtain it, except at expensive carriage from a distance.

ALBANY, Dec. 25, 1852.

A. S. BABCOCK, Esq.—Dear Sir:—In May, 1851, I came in posession of a lot of ground of two acres in the suburbs of the city, The soil is a clayey loam; the subsoil stiff clay and quite retentive of water. The neighbors who were acquainted with the ground, told me it was a cold piece of ground, could not be made to produce anything but grass; and that a market gardener who had attempted to work the ground adjoining, precisely like this, had been almost broken down by it, and was obliged to quit.

I was desirous to put the ground in good order for a fruit garden, and nursery purposes, and concluded that draining was what it needed as the first step towards improvement. A practiced English drainer was engaged and the whole piece thoroughly drained with your tile, drains laid twenty-one feet apart and two and one-half to three feet deep at an expense of some $50 per acre. I then had the ground plowed three times, at intervals of three or four weeks; and at each time well subsoiled with the subsoil plow, thus breaking up the subsoil pretty thoroughly to the depth of eighteen or twenty inches. At the last plowing, the land was dressed with about twenty loads to the acre of stable manure.

Last spring, (1852,) the whole ground was planted with seedling trees for propagating, in rows three and one-half feet apart. After planting the trees, I had onions sowed—a single row between the rows of trees on about one-third of the ground; beets in the came manner on about another third; and carrots on about one-fifth, and on the remainder nothing but the trees. The ordinary mishaps followed—perhaps rather more than ordinary. The wire-worm took a large part of the onions *clean*, soon after they came up, and left but now and

then one of the remainder. The beet-seed was bad, so that only a small portion of it vegetated. The carrots came up well, and when of a suitable size, were thinned to about four inches apart. The whole received fair ordinary cultivation during the summer, with the trees.

The produce was as follows:

5 bbls. Onions,	worth	$1,50. ...$7,50
100 bush. Blood Beet,	"	,30.....30,00
150 " Mangel Wurtzel	"	,20.....30,00
9 extra-sized two-horse wagon-loads carrots, 40 bushels to the load, is 360 bushels,		,25.....90,00
		$157,50

The ground sown to carrots measured but little over one-third of an acre, and that in single rows three and one-half feet apart. I am satisfied that the produce is equal to full 1500 bushels per acre, if planted exclusively to carrots in the usual way, in rows 18 inches apart. The onions occupied nearly double the area of ground that the carrots did, and it will be seen were almost a total failure, hardly paying for the seed. What few plants the worms left, however, did well. The beets, what vegetated of them, did well; some of the largest blood beets weighing sixteen pounds, and maugel wurtzel, eighteen pounds by actual weight. But the carrots almost exceed belief. As it is, with the onions almost a total, and the beets a partial failure, the produce of the whole pays the total expense of cultivation, of trees and all.

I would state that the crop upon this ground did not appear to suffer at all from the unprecedented drouth of last summer, while on ground of almost exactly the same character, not drained with me, the crop was greatly injured by drouth. The philosophy of this, after a little observation and reflection, is plain. The clayey soil, and still stiffer clay subsoil, retain the water of the winter and melting snows until a late period in the spring; so much so that such land is not fit to work until two or three weeks later than more porous soil. It is thus for a long period over-charged with water. Then, if a drouth follows, it bakes and cracks, and is about as permeable to the roots of plants, and capable of affording about as much nourishment as a sun-dried brick when ready for the kiln. On the contrary, if well drained, this water passes off freely, so that the soil retains no more than its capillaries hold. It is in working condition in good season in the spring, and if well broken up to a good depth, it keeps in an open, friable condition from early spring till winter. This is my experience with soil of this nature, and doubtless that of others. In my opinion, the expense of draining stiff clay soil is repaid by the fitting it for early working in the spring alone.

I should remark that on the two acres spoken of, there was nothing like springy ground. The difficulty with it had been simply the retention of water falling on the surface.

Some of my friends inquire if it is not over-doing the thing? If for our hot and dry summers, such thorough draining will not rather injure the land by taking from it its moisture, &c., and the difference between our climate and that of England, where draining is held in so high estimation, is cited cautious-wise, that injury may be done, rather than benefit. My reply to this is, that no land can be injured by taking from it all the water that will run off. This I think will be admitted by most without proof; but if proof is wanting, such cases as the one I detailed would seem conclusive.

I feel so much confidence in the improvement of the soil by means of draining, that I have the last season lain from four to five miles of drain on a little place two miles from the city. On one swampy piece of half to three-quarters of an acre, which probably had never before been free from water since creation, drained last fall (1851) produced this year a good crop of corn; the drains running water the whole summer, though no water passed from it previously, three or four months of summer and early fall.

I have used the tubular or sole tile, and think them decidedly preferable to the horse-shoe tiles, or those open at the bottom; as the water running in them keeps them clean. I have laid them mostly of the smaller size, say 2 to 2½ inches diameter, and 2½ to 3 feet in depth by 21 to 25 feet apart, in parallel lines according to the character of the subsoil. The expense varies with me from $40 to $50 per acre when the whole ground is drained. Very truly yours, &c.,

C. P. WILLIAMS.

Pratt's Ditch Digger.

Mr. R. C. Pratt, of Canandaigua, N. Y., patented in July, 1853, a machine for digging ditches, which proved one of the best things exhibited at the late State Fair. By its aid one man and two horses have frequently dug 150 rods of ditch three feet deep in one day; and from 50 to 150 (according to the nature of the soil) is considered a day's work. The machine consists substantially of a scoop and revolving wheel—the scoop scraping and the wheel carrying up the dirt until at a sufficient height it is tumbled out upon the sides, at a little distance from the ditch. Several repetitions of the operation is required before the ditch is sunk to a sufficient depth.

The specimen exhibited at the late Fair was all wrought iron, and weighed between 700 and 800 pounds. The diameter of the main wheel was five feet, and the breadth of the diggers or lifters fixed thereon, and that of the scoop or curved channel in which they rise, is about nine inches. Although the lifting apparatus is thus narrow, it is practicable and indeed desirable, to make the small plows or cutters which pare the side cuts somewhat wider, so that a ditch of any width, from nine to fifteen inches, may be excavated by the same machine.

The weight of the dirt which is being lifted, the curved channel, and in fact the whole machine, rests on the diggers, which, like the floats of a paddle-wheel, project from the periphery of the main wheel. As the machine is drawn forward by the horses, the diggers are successively forced into the earth, and compel the wheel to rotate—thus carrying up and discharging from the top all earth caught by the scoop, which is in immediate contact behind. On the extreme rear of the whole are adjusted cutters or small plows, which pare the sides and tear the earth to a suitable distance below, ready for the next passage of the machine, so that after the first passage the diggers are always pressed down in to the ground already

loosened, from the depth of from two to ten inches, which loosening may be supposed to regulate the depth to which they will be likely to sink. The wheel and its accompaniments being of considerable weight, great muscular exertion would be required of the attendant to prevent its falling on one side, but for a simple and very effectual provision for its support. The stout iron shaft on which the main wheel revolves, is prolonged some two or three feet on each side and provided with a light carrying wheel mounted loose, as in a common carriage axle, to run upon the ground. These wheels are to maintain the upright position of the machine; but the weight must, at all times, when in operation, be allowed to rest upon the diggers. In short, the main wheel and the whole machine must be allowed to sink down into a ditch or rise to the surface, while the carrying wheels simply run lightly on the surface at the sides. This end is accomplished by bending the axle into the form of a large crank at each side and releasing it from all connection with the machine, except that of passing loosely through the centre. A catch is provided by which the attendant (who is supposed to be grasping a pair of handles in the rear) may make the connection a fixed one at pleasure, and when desiring to leave the field and travel the road the weight may by this means be thrown entirely upon the carrying wheels.—*N. Y. Tribune.*

Currants.

The fruit of the currant is universally admired. Its pleasant sub-acid flavor renders it peculiarly excellent in tarts and pies, and makes, with a small addition of sugar, a very desirable substitute for apple sauce. From the ripe fruit an excellent and cheap wine may be manufactured, either with or without alcoholic properties. No fruit is susceptible of more easy cultivation. It will readily adapt itself, in some degree, to every description of soil, and may, without much trouble, be made to produce, even prodigiously, on those which are constitutionally moist and wet. In cultivating it, however, it is better to adapt the soil to the plant, rather than endeavor, by forced efforts, to adapt the plant to the soil. Acclimatory changes are generally slow, and have a decided tendency to destroy the strength and hardihood, as well as the prolific power of all plants. Yet circumstances, as well as the capriciousness of taste, often demand this.—*N. E. Farmer.*

The Apiary.

Its Location.—In the location of the apiary, one important consideration is that it is convenient to watch in the swarming season; that the bees may be seen at any time from the door or window, when a swarm rises, without the trouble of taking many steps to accomplish it; because if much trouble is to be taken, it is too often neglected. Also, if possible, the hives should stand where the wind will have but little effect, especially from the northwest. If no hills or building offer a protection, a close, high board fence should be put up for the purpose. It is economy to do it—bees enough may be saved to pay the expense. During the first spring months, the stocks contain fewer bees than at any other season. It is then that a numerous family is important, for the purpose of creating animal heat to rear the brood, if for nothing else. One bee is of more consequence now than a half dozen in midsummer. When the hive stands in a bleak place, the bees returning with heavy loads, in a high wind, are frequently unable to strike the hive, and are blown to the ground, become chilled and die. A chilly south wind is equally fatal, but not so frequent. When protected from winds, the hives may front any point you choose; east or south is generally preferred. A location near ponds, lakes, large rivers, &c., will be attended with some loss. Hard winds will fatigue the bees when on the wing, often causing them to fall in the water; where it is impossible to rise again until wafted ashore, and then, unless in very warm weather, they are so chilled as to be past the effort. I do not mention this to discourage any one from keeping them, when so situated, because some few must keep them thus or not at all. I am so situated myself. There is a pond of four acres, some twelve rods off. In spring, during high winds, a great many may be found drowned, and driven on shore. Although we cannot miss so few from a stock, it is nevertheless a loss as far as it goes.

Decide Early.—Whatever location is chosen, it should be decided upon as early as possible; because, when the chilling winds of winter have ceased for a day, and the sun, unobstructed, is sending his first warm rays to a frozen earth, the bees that have been inactive for months feel the cheering influence, and come forth to enjoy the balmy air. As they come from their door, they pause a moment to rub their eyes, which have long been obscured in darkness.

Bees Mark their Location on Leaving the Hive.—They rise on the wing, but do not leave in a direct line, but immediately turn their heads towards the entrance of their tenement, describing a circle of only a few inches at first, but enlarge as they recede, until an area of several rods have been *viewed and marked.*

Changing Stand Attended with Loss.—After a few excursions, when surrounding objects have become familiar, this precaution is not taken, and they leave in a direct line for their destination, and return by their waymarks without difficulty. Man with his reason is guided on the same principles. There are a great many people who suppose the bee knows its hive by a kind of instinct, or is attracted towards it, like the steel to the magnet. At least, they act as if they did; as they move their bees a few rods, or feet, after the location is thus marked, and what is the consequence? The stocks are materially injured by the loss of bees, and sometimes entirely ruined. Let us trace the cause. As I remarked, the bees have marked the location. They leave the hive without any precaution, as surrounding objects are familiar. They return to their old stand and find no home. If there is more than one stock, and the removal has been from four to twenty feet, some of the bees may find a hive, but just as liable to enter the wrong one as the right. Probably they would not go over twenty feet, and very likely not that, unless the new situation was very conspicuous. If a person had but one stock, very likely the loss would be less, as every bee finding a hive, would be sure to be home, and none killed, as is generally the case when a few enter a strange hive.—*M. Quinby.*

Origin of Black Hawk.

[The following article from the Boston Cultivator, is of considerable length, but it is so conclusive, and the subject so interesting to a large class of our readers, that we are induced to copy it entire.]

In various species, animals are now and then produced possessing some striking superiority, which they impress in a marked degree on their offspring. It is well to preserve all facts in regard to the origin of such animals, as they may serve to form rules of guidance in the art of breeding. The writer of this article has for several years interested himself in procuring materials relating to the history of what is popularly known as the Morgan family of horses, including the famous Black Hawk. The latter animal has justly obtained a reputation as the sire of valuable roadsters and fast trotters, which is believed never to have been equalled by any other horse in this country.

The main facts in regard to the origin of Black Hawk have long been before the public. His owners have always represented him as a colt of the well-known "Sherman Morgan," and although this statement has been well substantiated, and has received general assent, there have been persons, who, from what motive we will not say, have circulated a story that he was begotten by a horse called "Paddy." So long as this story was propagated without any responsible authority it could hardly be deemed of sufficient consequence to require formal notice; but as it has lately assumed a more tangible from through a correspondent of an agricultural periodical, we have concluded to put the public in possession of such information as will demonstrate its utter groundlessness, and consign it to perpetual oblivion.

The authorities to which we deem it proper to refer, will be presented in the order, as to time, in which they occur. The first is an extract from a letter of Benjamin Thurston, of Lowell, who was for several years the owner of Black Hawk, under whose training he was brought on the trotting course, and by whom he was sold to Mr. Hill in 1844. Under date of Oct. 7th, 1847, he says:

"It gives me much pleasure to answer your letter, as I feel a great interest in any thing which relates to Black Hawk. I will answer your questions in the order in which they are asked:

"1st. Black Hawk was raised by Mr. Twombly, of Greenland [formerly of Durham], N. H. 2d. He was begotten by Sherman Morgan, owned by Mr. Bellows at that time. 3d. His dam was represented to be a half blood English mare, raised in New Brunswick. She was finely proportioned, and of great speed. Although never trained, I think she could trot a mile in less than three minutes."

This letter, it will be noticed, was written nearly eight years ago. To show the estimation in which Black Hawk and his progeny were then held by Mr. Thurston, it will not be out of place to introduce another extract from the same letter, as follows:

"I bought Black Hawk when he was four years old; for six years used him as my family horse, and think him, without exception, the finest horse I ever knew. I have owned a number of horses for the last twenty-five years,—varying from ten to thirty-five at a time,—and have also been in the habit of purchasing the finest I could find for sale; but if the choicest qualities of the best horses I ever owned were combined, I do not think they would produce an animal to surpass Black Hawk. In the first place, he is the best roadster I ever drew rein over. I have frequently driven him fifty miles in half a day, and once drove him sixty-three miles in seven hours and fifteen minutes. He did it with perfect ease, and indeed I never saw him appear fatigued. At the time I owned him, I believe he could have trotted one hundred miles in ten hours, or sixteen miles in one hour, or one mile in two minutes and forty seconds. In the second place, he has the best disposition of any horse I ever knew, and is perfectly safe for a lady to ride or drive. Thirdly, he will draw as kindly as any team-horse. His stock is unequalled. There is in this part of the country some ten or twelve of his get, five or six years old. These can trot a mile in from two minutes fifty-five seconds to two minutes thirty-five seconds, and they sell at prices ranging from $500 to $1,000. They are finely proportioned, good sized, nice gaited, hardy, compact animals."

We next introduce an extract from a letter written by John Bellows, of Lancaster, N. H., (owner of the horse Sherman Morgan,) to David Hill, of Bridport, Vt. It comprises an interesting description of the sire of Black Hawk. Its date is March 24, 1848:

"In answer to inquiries relative to the origin of your famous horse Black Hawk, I state that he was foaled at Durham, N. H., the property of Wingate [Ezekiel] Twombly, now of Greenland, N. H. She was a good sized, fast trotting, black mare, resembling, in appearance, the Messenger stock of norses. His sire, old Sherman Morgan, was truly a prodigy among horses. He was fourteen and a half hands high; his greatest weight while owned by me, 925 lbs.; of chestnut color; well strung in cord, muscular; in action exhibiting wonderful strength and agility; though apparently mettlesome, yet easy of control; sagacious and patient in trouble, and of matchless endurance. He had a lively countenance, with an amiableness of expression, captivating, in effect, beyond any horse I have ever seen. He was foaled at Lyndon, Vt., in 1811, the property of James Sherman, Esq., and died at my stable in January, 1835. But for this animal, Morgan horses would never have had the celebrity they enjoy. His dam was bought by Mr. Sherman of Dr. Fiske, of Providence, R. I., and was said to have been imported. She was of good size, and fine appearance; of a chestnut color; elegant in action, and a speedy trotter. His [Sherman Morgan's] sire was the Goss [or Justin] Morgan, brought to Randolph, Vt., by Col. Morgan."

The mistake of Mr. Bellows in regard to the christian name of Mr. Twombly, was corrected by him in other letters, as will be seen. It was, however, inadvertently copied in one or two printed notices of Black Hawk. The above extract might be regarded as amply sufficient, so far as the testimony of Mr. Bellows is required, but to show that his statements have been entirely consistent on this point,—whatever may have been intimated to the contrary,—we give in full a letter of his to another person, written more than two years after the above:

Lancaster, N. H., Aug. 14, 1850.

"Dear Sir:—Being absent on the arrival of your letter, I now reply to your inquiry relative to the justly celebrated horse 'Black Hawk,' formerly owned by Benjamin Thurston, of Lowell, Mass., and raised by E. Twombly, late of Greenland, N. H. Said horse is, without doubt, a son of 'Old Sherman Morgan,'—whatever may be said to the contrary by persons prejudiced against the horse or his owner, or from enviable hostility to the inestimable breed of Morgans. I state, and can prove, that the horse called and known as Old Sherman Morgan, covered the mare which produced Black Hawk about eleven months previous to his being foaled, and I do not believe any other horse covered her the season he was begotten; and when Black Hawk was nine days old, 'Morgan Cock-of-the-Rock' covered the dam, and she produced a foal the next year by said horse. I received $15 for service of Old Sherman, for service rendered in 1832, and $10 for service of 'Rock' in 1833, as appears by my books of those years.

"Distinguished animals, like distinguished men, have their calumniators, and the story to which you allude is false, and originated from malignant hostility, rather than good will to the breeders of horses. Very respectfully,

"JOHN BELLOWS."

The story which Mr. Bellows thus pronounces "false," was that which represents "Paddy" as the sire of Black Hawk.

Mr. Thurston, in connection with another person, bought Black Hawk of A. R. Mathes. This gave rise to the erroneous idea which found its way into print, that Mr. Mathes, (or Matthews as the name was printed) was the *breeder* of the horse. We learned in a personal interview with Mr. Mathes (now of this city), that he purchased Black Hawk of

a nephew of Ezekiel Twombly—the latter having died shortly previous. He states that he bought him as a "Sherman Morgan colt," and heard nothing to the contrary till long afterwards. He stated, also, that Benjamin Kelly, of Durham, N. H., owned the dam of Black Hawk at the time he was begotten, and that Mr. Kelly sold her to Mr. Twombly after she was got in foal by Sherman Morgan—Mr. K. being obligated to pay for the service of the horse. At our solicitation Mr. Mathes wrote to Mr. Kelly on the subject, and received a reply, dated December 21, 1854, from which we take the following:

"In the spring of 1832, Mr. Bellows came to my house with the old Sherman Morgan, and stopped there one day and night in each week, from May 8th to July 31st. While at my stable, the old Morgan was put to the black mare, the mother of Black Hawk. A few weeks before she foaled, I sold the mare to Ezekiel Twombly, of Durham. The colt you bought, and sold to Brown & Thurston. Mr. Bellows called on me for the pay for the service of the horse. In 1833, July 26th, I paid him $15, and took his receipt for the use of said horse; the same I charged to Twombly, for when I let him have the mare, he agreed to pay for the use of the horse. I am CERTAIN that no other horse was put to the mare while I had her."

The foregoing documents need no explanation. or comment Their explicitness leaves not a loop on which to hang a doubt respecting the sire of Black Hawk. The general spread of his progeny over the country, and the high estimation in which it is everywhere held, is a sufficient excuse, in connection with the circumstances before spoken of, for devoting the space we have to this subject.

We saw Black Hawk a few weeks since, at the stable of his owner, David Hill, Esq., Bridport, Vt. The old horse is in good health, and scarcely touched by the frost of age. The charge for his service is fixed at $100 a mare for the season, and Mr. Hill informed us that about thirty mares were already on his book for 1855.

Reported for the Farm Journal.

Meeting of the Philadelphia Society for Promoting Agriculture.

Philadelphia Society for promoting Agriculture. Stated meeting at Hall, S. Third st., Wednesday morning, 7th inst.

Mr. Landreth, President in the chair. After the reading of the minutes the following gentlemen previously proposed were elected members, viz., Messrs. Wm. Hacker, and J. T. Balderston of Philadelphia, and Mr. A. Ter Hoven of Frankford.

Three propositions for resident members were received. The Secretary reported having sent to additional kindred Societies, copies of the published minutes of the Society. Letters acknowledging the receipts of copies were read from Mr. John Jay, President of Bedford Farmers' Club, West Chester Co. N. Y., and from General J. T. Worthington, Pres. of Ohio State Board of Agriculture, Chillicothe, Ohio. Copies of the proceedings of the Ohio State Board and of the Penn. State Agricultural Society received in exchange, were presented.

The Executive Committee recommended that action on the question of holding an exhibition next autumn be postponed until next meeting.

Mr. A. J. Roberts in behalf of the Committee on annual appropriation, reported that the old county appropriation would be continued this year by the present city government.

Dr. A. L. Kennedy from the delegation of the U. States Agricultural Society, reported the proceedings of that body at its late session in Washington; neither the time nor place of holding the annual exhibition of that Society had been determined; the question has been left with the President and Executive Committee.

Mr. Isaac Newton offered a Resolution appointing a committee to confer with the President of the United States Society on the propriety of their next Exhibition being held in Philadelphia,—which, after discussion by Messrs. Roberts, Elwyn, Biddle, Spangler, Newton, Willitts and Ingersoll was amended by Mr. Roberts and passed finally in the following form.

Resolved, by the Philadelphia Society for promoting Agriculture, that in their opinion an Exhibition by the U. S. Agri. Society might be advantageously held at Philadelphia; and that a committee of three be appointed to confer with the President of the U. S. Agri. Society, and the Executive Committee of the State Society, on the subject.

On motion that the President be Chairman of the Committee and that he appoint his colleagues, which was so ordered. The committee consists of Messrs. Landreth, Biddle and Newton.

H. Ingersoll Esq. called up his resolution proposed at preceding meeting to strike out nineteenth By-Law, which now renders the President ineligible for more than two years, which resolution after much discussion was lost.

S. H. Austin Esq., called attention to a tract of two hundred acres above Germantown, which has been purchased by a number of gentlemen with the intention of building a large Hotel thereon. He believed that this Society would find it advantageous to hold their annual Exhibitions there in future, and doubted not that highly favorable terms might be made with the proprietors.—whereupon

Dr. J. A. M' Crea moved that a Committee of three be appointed to examine the above ground, the terms on which it can be used &c., and report at next meeting, which was carried, and Messrs. M'Crea, Blight and Sheridan were appointed the Committee.

The Chair introduced to the meeting Dr. John A. Warder of Cincinnati, who delivered, a brief and interesting address on the subject of hedges. He confined himself to the *Maclura* or Osage Orange, a plant which he deemed especially adapted to the purposes of hedging in this country. The subject was one of immense importance, especially to the West, where timber is scarce and land cheap, and where thousands of miles of these hedges were being set. For land worth more than a hundred dollars per acre, and in fields of less than twenty acres, hedges were not to be recommended. Hedge planting in America has been a series of failures; not, he contended on account of the climate, for the *Maclura* was indigenous to this country, but from injurious planting and treatment; planting too close, too near to a dead fence, want of cultivation and of sufficiently severe pruning. These were the causes of failures, and his method was designed to avoid them. He subsoiled and planted one foot apart. The following spring he cut off all the vertical branches three inches from the ground, barely trimming the lateral ones at their ends; the next year he repeated the cutting at the same height; the following year he cut again but at the height of six inches. By this method he obtained a perfect mat of branches near the ground, where they were needed, five feet across and about twenty inches high, which formed a complete protection in itself. Less trimming would be required during the succeeding years, but bold cutting as above must be resorted to, if an impenetrable thicket close to the ground would be secured. Frequently hedges were found as it were upside down, thick and bushy above, but wide gaps below through which a hog might creep, the branches having disappeared. The *Maclura* was of easy propagation and rapid growth. It did not sucker and could be plowed as near as you could coax your horses. The vertical shoots would run up the first year to a height of from four to ten feet. The plan of *wattling* or interweaving the branches in order to produce an impenetrable wall and save

ground has been tried. This had been attempted four years ago at the Cincinnati Cemetery, and had not succeeded. He could now get his leg through and the hedge was growing worse. The *Maclura* hedge treated as he proposed is a grand thing for Rail Roads, and could be set and kept trimmed for three years at about seventy-five cents a rod; the R. R.company paying for the plowing.

The Chair stated that an Osage Orange tree planted in the vicinity of the city by his father thirty years ago was still growing luxuriantly. He doubted if the plants were trimmed as proposed that they would live that long.

Dr Kennedy called attention to some beautiful and exact engravings of insects injurious to vegetation, made by Mr. R. D. Glover, now of Washington city.

Dr. Elwyn requested members to examine some faithful oil paintings of Horses and Cattle from life by Mr. Clarkson, an excellent artist in that line in this city. These paintings have been sent to the room for inspection. Adjourned.

Living in the Country.

"We have had an invitation to a party," said Mrs Sparrowgrass, "on Friday next, and I think a party is a very pleasant thing in the country. There is more sociability, more hospitality, warmer welcomes, less dress, and less style than there is in the city." Here Mrs. Sparrowgrass handed me an engraved card of rather formidable dimensions, which I must confess looked any thing but *rural*. I took the missive with some misgivings, for I have a natural horror of parties. "I wonder," said I, in the most playful kind of bitter irony, "whether we will meet out here that young lady that never sings herself, but is always so passionately fond of music?" Mrs. Sparrowgrass said she thought not; she said she heard she was married.

"And that gentleman," I continued, "who was a stranger to me, that always wanted to be presented to some young lady that I didn't know?"

Mrs. Sparrowgrass said she believed he had gone to California.

"And that lady who prized confectionery above good breeding, and went home with her pockets well stuffed with mottoes, in defiance of the eighth commandment, and the laws of propriety?"

Mrs. Sparrowgrass said she knew the lady to whom I alluded, but she assured me she was yet in New York, and had not been seen about our village.

"Then," said I, "Mrs. Sparrowgrass, we will go to the party. Put my best shirt, and the white waistcoat in Monday's wash. Never mind expense. Get me a crumb of bread, and bring me my old white gloves. I am going to be gay,"

"I think," said Mrs. Sparrowgrass, "that a party in town is nothing but an embarrassment." "True" said I. "Don't you remember," said she, "what a fuss I used to make about getting my hair fixed, and how put out I was that night when you forgot the Japonica?" "Certainly." "And then, when we were all dressed and ready, how we used to wait for fear of getting there too early, and after we did reach the house, how we always got in a corner, and made happy wall-flowers of ourselves, and some old friend." "Of course I do." "Where nobody took any notice of us." "Exactly." "Then what difference did it make how I was dressed—whether I wore Honiton lace or cotton edging?"

"I am afraid," said I, Mrs. Sparrowgrass, if you had made a point of wearing cotton lace, you would not have been invited." At this palpable *double entendre* I felt that secret satisfaction which every man must feel when he has said a good thing. It was lost upon Mrs. Sparrowgrass. "Here," she continued, "we expect a simple, old-fashioned entertainment. Then I chimed in—"No gas-lights to make your eyes ache—no patent-leather to make your feet ache—no fashionable follies to make your heart ache—and no overheated, ill ventilated rooms, boned-turkies, game, ice-cream, Charlotte Busse, pates, champaigne, and chicken-salad, to make your head ache next morning." "There will be oysters and ice-cream," said Mrs. Sparrowgrass, dubiously. "I wish," said I, "there was a prospect of apples and cider instead. The moment I get inside the doors, and breathe the mingled odors of oysters and geraniums, it will carry me back to town, and for one evening, at least, I shall forget that we are living in the country.

—'I could be content
To see no other *verdure* than its own;
To feel no other breezes than are blown
Through its tall woods;'

but we must succumb; we will go like plain, sensible people, won't we?"

"If you were me, what would you wear?" said Mrs. Sparrowgrass.

"Something very plain, my dear."

"Then," said Mrs. Sparrowgrass, "I have nothing very plain, suitable for a party, and to-morrow I must go to town and do a little shopping."

"I am afraid," said I, (after the second day's hard shopping in town) "your dress is going to be too plain, my dear. Every hour brings a fresh boy, with a fresh bundle, and bill to my office." Mrs. Sparrowgrass said, "that if I thought so, perhaps she had better get something expensive when she went to buy the trimming," I told her I thought her dress would do without trimming. She said, "it would be ridiculous without gimp or galloon; but perhaps I would prefer velvet ribbon, on account of the flounces!" I told her she had better get the velvet ribbon, and omit the gimp and galloon. Mrs. Sparrowgrass said "very well," and the next day another boy brought another bundle, and another bill, which convinced me that extras form an important item in rural architecture. Then we had a dressmaker for several days, and the stitching went on by sun-light and lamp-light, and on the last day Mrs. S. discovered she had nothing for her head, and the new bonnet was taken to pieces to get at the feathers for a coiffure. Then when the night fell, there was too a soaking rain; and I had forgotten the carriage, so I was obliged to go a mile in the mud to order one from the village livery stable. Then I had to walk back, as the man said "it was out;" but he promised to send it for us right straight off. Then I had to dress over again. Then Mrs. S. could not find her best handkerchief, and I dropped five spermaceti blotches on the new silk dress looking for it. Then she found the handkerchief. Then our girl said that the new dog had run off with one of my boots. Then I had to go out in the mud in my slippers after the dog. Then I got the boot and put it on so as to make that sure. Then we waited for the carriage. We were all dressed and ready, but no carriage. We exercised all the patience we could muster, on account of the carriage, and listened at the windows to see if we could hear it. Two months have elapsed, and it hasn't come yet. Next day we heard that the party had been an elegant affair. That everybody was there, so that we concluded the carriage had not been able to come on account of business.

I have bought me another dog. I bought him on account of fine long ears, and beautiful silky tail. He is a pup, and much caressed by the young ones. One day he went off to the butcher's, and came back with no more tail than a toad. The whole bunch of young Sparrowgrasses, when he reached the cottage, began to bawl on account of his tail. I did not know him when I came home, and he could not recognize me—he had lost his organ of recognition. He

reminded me of a dog I once heard of, that looked as if he had been where they wanted a tail merely, and had taken his, and thrown the dog away. Of course I took my stick, and went to see the butcher. Butcher said "he supposed I was something of a dog fancier, and would like to see my dog look stylish." I said on the contrary, I had bought him on account of his handsome silky tail, and that I would give ten dollars to have it replaced. Then the idea of having it replaced seemed so ludicrous that I could not restrain a smile, and then the butcher caught the joke, and said there was no way to do it except with fresh putty. I do love a man that can enjoy a joke, so I took a fancy to that butcher. When I got home and saw the dog, I thought less of the butcher, but put a piece of black court-plaster on the dog, and it improved his appearance at once. So I forgave the butcher, and went to bed at peace with all mankind.

Our neighbor has been making an improvement in his house. He has had a drain made in the kitchen, with a long earthen pipe ending in a cess-pool at the end of his garden. The object of it is to carry off the superfluous water from the house. It was a great convenience, he said, "on wash days." One objection might be urged, and that was after every heavy rain he found a gully in his garden path, and several cart-loads of gravel in his cess-pool. Besides, the pipe was of an equal width, and one obstruction led to another; sometimes it was a silver spoon or a child's frock; sometimes it was a scrubbing-brush, a piece of soap, and a handkerchief. I said that if he had made a square wooden trough, gradually widening from end to end, it would have cleared itself, and then I thought it would be a good thing for me to have such a one myself. Then I had a cess-pool built at the bottom of the wall, under the bank, which is about one hundred and fifty feet from the kitchen, and told my carpenter to make a trough of that length. Carpenter asked me "how big I wanted it?" I told him about eight inches in diameter at the end nearest to the house, and then gradually widening all the way for the whole length. As I said this, my carpenter smiled, and said he never heard of such a thing. I told him no, that the idea was an original one of my own. He asked me how much I would like to have it widened. I replied, "about half an inch to a foot." He said very well, and the next week he came with two horses and an edifice in his cart that looked like a truncated shot tower. I asked him what that was? He said it was the big end of my pipe. When he laid it on its side, I walked through it, and could not touch the upper side with my hand. I asked the carpenter what he meant by it, he said it was made according to directions. I said not at all, that I told him to increase the diameter at the rate of half an inch to the foot, and he had made it about a foot to the foot, as near as I could judge. "Sparrow-grass," said he, a little nettled, "jest take your pencil and put down eight inches." "Well that is the diameter of the small end, I believe?" I told the carpenter he was right so far. Now for every foot there is an increase of half an inch in the width; that's according to directions, too, aint it? Yes. "Well, then, put down one hundred and fifty half inches, how much does that make, altogether, in feet?" Six feet eleven inches." Now," said he, "jest you take my rule, and measure the big end of that ere pipe." "Carpenter," said I, "I see it all, but the next time I build an aqueduct I will be a little more careful in the figures." "Sparrow-grass," said he, pointing to the pipe, "did not you tell me that was an original idea of your own?" I answered that I believed I did make a remark of that kind. "Well," said he, with a sort of muffled laugh, "that is the first time that I did see an original idea come out at the big end."

Report on some of the Diseases and Insects Affecting Fruit Trees and Vines.

By Thaddeus William Harris, Professor of Entymology of the Mass. Horticultural Society.

Swollen Branches of the Apple Tree.—On the 31st of May, the Hon. M. P. Wilder, sent to me some pieces of the limbs of an apple tree, which were singularly enlarged in diameter to the extent of several inches. He found the disease to prevail on the north side of the tree, while the south side was almost entirely free from it. The specimens were carefully examined by Prof. Asa Gray and myself, without insects, their punctures, or their tracks being found therein. One of the branches, measuring two and a half inches in circumference immediately below the swollen part, was enlarged above this spot to four inches in circumference, and the enlarged portion was eleven inches in length. The outer bark seemed perfectly healthy, When sawn transversely, the pith was not found in the centre of the piece, but nearer to one side than the other, where the layers of wood were thicker, and looser in texture. It was also evident that the thicker layers followed a spiral direction around the limb. When the bark was raised, the wood presented a singularly irregular surface, caused by numerous depressions and furrows, which were filled by corresponding elevations of the inner bark. The disease was evidently a diseased formation and irregular deposit of woody matter. It belongs to the province of the vegetable physiologist to explain the cause of this preternatural and diseased formation.

Warts or Excrescences on Plum Trees.—These have been attributed by many persons to the punctures or to the presence of insects therein. I have not been able to find either the one or the other in the incipien. warts or in their immediate vicinity. It was only when these excrescences were well grown and were approaching to maturity, that insects were discovered in them, and not always even in this stage. Some of the twigs, containing incipient warts, were enclosed in a tight vessel in May, and were examined in August, when they were entirely free from the vestiges of insects, although the tumors when cut open, presented the porous and cancellated structure peculiar to them when dry. The insects to be found in the warts in the course of the summer are of sundry kinds; such as the grubs of the plum-weevil, borers similar to those that attack peach and cherry trees, and the worm-like caterpillars of minute moths. The last seem to be the most abundant and the most common. Their presence is made known by the castings or grain-like fragments thrown out of their burrows upon the surface of the warts. These tumors also afford nourishment to certain vegetable parasites, the little black grains, half immersed in the surface, to which, when mature, they give a deep black color. These little grains are fungi, which have been described under the name of *Sphæria morbosa*. But neither to them, nor to various insects before named, is the origin of the warts to be ascribed. The incipient warts can be detected, before the outer bark is ruptured, by the swollen appearance and spongy feeling of the surface. They seem to be the result of diseased action in the inner bark and new wood, while these parts are in a state of rapid formation. Upon examination, the cells of the tissues are found to be surcharged with fluid, and distorted in shape and arrangement. The plum tree has been called a gross feeder. It may imbibe fluids by its roots faster than it can exhale the superfluous moisture from its leaves; or the function of the latter may be checked by such sudden changes in temperature and in the hygrometric state of the atmosphere as are common in the spring. In either case, there would be likely to ensue an accumulation of fluid in the branches, and par-

ticularly in the tender issues of the new wood, where warts are most commonly developed.

From experiments made upon my own trees, I have reason to believe that the growth of these tumors may, in great measure, be prevented by severe root-pruning, stimulating the bark in the spring, or before the buds expand, by washing it with soft soap, and by cutting off the warts as soon as formed, and applying salt or brine to the wounds.

CURL OF THE LEAVES OF THE PEACH TREE.—This affection, to which the tree is subject during the month of May, and by which it often loses all its first leaves, has been commonly attributed to the punctures of insects, such as *aphides* and the *thrips*. It is, however, very doubtful whether these insects are the real cause of that diseased change in the texture and form of the leaf which is called the curl, because the insects in question are rarely seen on the affected leaves, and never in such numbers as sufficiently to account for the extensive injury sustained. The surface of these leaves is swollen into irregular and crisp tumors, often of a reddish color, and of a spongy texture, formed of thickened and succulent cellular tissue. These tumefactions present some analogy to the warts of the plum tree, and may have a similar origin. The affection has often been observed to follow a cold storm in May, whether connected therewith or not. If sudden cold and moisture have a tendency to check evaporation from the leaves, fluids will accumulate therein, and may thus bring about the changes by which they become blasted. It is confidently stated that soaping the limbs of the trees early in spring, or washing them with a solution of sulphur and potash, will prevent them from suffering from the curl. Peach trees on plum stocks seem to be nearly exempt from this affection, perhaps because the supply of this nourishment from the roots and the exhalation from the leaves are more nearly balanced in them; for the plum stock makes fewer or smaller roots than the peach on its own stock.

THE YELLOWS.—For the first time in eleven years the symptoms of this disease have appeared in my garden. It is confined to two branches on the north side of one peach tree, the fruit on which is becoming red some three or four weeks too soon, while a few wiry shoots, clothed with diminutive and pale leaves, have sprouted upon these branches. Neither *borers* nor the *Tomicus liminaris* have been discovered in the tree; and the cause of the disease remains as much a mystery to me as to other cultivators. I propose cutting off the diseased branches, and dressing the soil around the tree with ashes and urine, as an experiment towards checking the further developement of the disease. In former years peach trees have rarely suffered from the yellows in this neighborhood, where now many trees are affected with it. Has the severe drought of the present season had any influence in producing the disease?

INSECTS OF THE APPLE TREE.—My remarks will necessarily be confined to a very few of the numerous insects infesting fruit trees and vines; there being nothing new or particularly interesting to be stated concerning the greater part of them.

Canker-worms.—There are some parts of the country in which these insects have never appeared: in other parts their visitations occur several years in succession, are then suspended for an uncertain term of years, after which they recur again as before. Thus, in the vicinity of Boston, these insects prevailed from 1831 to 1840, increasing yearly in numbers till the last date, after which they disappeared almost entirely till 1847, when they began again to attract attention, and have become more numerous every year till the present time. Their ravages during the past summer, in Cambridge and some of the adjacent towns, have been very serious, but have not yet reached the height they attained in 1839 and 1840. Canker-worms are generally found upon the buds and leaves of the trees before or about the middle of May, and disappear before or about the middle of June, their depredations lasting nearly or quite four weeks. The parent insects, consisting of winged males and wingless females, ascend from their burrows in the ground in the latter part of October, and during the month of November, and again in the spring from the middle of March to about the tenth of April. Their spring rising is sometimes retarded and prolonged a week or more by the backwardness of the season. In mild winters a few of the insects may ascend at various times between the periods for the ordinary autumnal and spring risings. It is during these same periods that our trees require to be protected against the ascent of the females. Soft tar, seasonably applied around the trunks of the trees, and frequently renewed, is the remedy which has been longest and most relied upon for this purpose. Various other expedients have been tried to prevent the insects from ascending the trees and depositing their eggs upon the branches. Those most worthy of confidence are circular and leaden troughs, containing cheap oil or gas-tar, secured in a horizontal position around the trunks of the trees, and the glass rings, lately invented by Mr. George Everett, of Roxbury, the efficacy of which, however, has not yet been sufficiently tested. Canker-worms are very injurious to cherry and plum trees, and to elms and maples, all of which will have to be secured from their anticipated depredations in the same way as apple trees.

Palmer-worms.—In the second edition of Dr. Deane's "New England Farmer and Georgical Dictionary," published in 1797, there will be found the following account, under the article *Insect:*

"The Palmer-worm, a wanderer, as its name signifies, is a small worm, about half an inch in length, with many legs, and extremely nimble. It appears at different times in different parts of the country. I have seen them only on apple trees and oak trees, in great abundance. They give the trees the same appearance that the canker-worm does. They appeared in the county of Cumberland [Maine] in the year 1791, about the middle of June, eating off the covering of the leaves on both sides, and leaving the membranous part entire. The following year there were none to be seen, and I have not known them in any place two years in succession. The seeds of them may be constant, wanting only a particular state of the weather to produce them. The spring which preceded their appearance had been remarkably dry, both in April and May. The history of this insect is so little known, that I will not undertake to say how they may be successfully opposed. I made smoke under the fruit trees, without any apparent effect. As they let themselves down by threads, they may be thinned by shaking the trees and striking off the threads. Their ravages had not any lasting effects, for the orchards, that had been visited by them, bore plentifully the following year."

During the month of June, 1853, a small worm, or naked caterpillar, whose history accords, in every particular, with the foregoing account, was observed in great numbers on apple, cherry and plum trees, and on oaks, throughout the greater part of New England and the valley of the Hudson in New York. In some places, orchards suffered from these insects as much as from the ravages of canker-worms; and not only the leaves, but also the fruit was injured or destroyed by them. By many persons they were mistaken for canker-worms. The latter disappeared here about the tenth of June, at which time the palmer-worms were just beginning their depredations. These worms differed from

the former in having sixteen legs, in being much more active in their motions, and in creeping without looping or arching up their backs at every step. They were also smaller and differently colored. Towards the end of June, they came to their growth and left the trees, their disappearance, in many places, coinciding with the heavy showers which fell at that date. Some of the insects which were secured, covered themselves with little transparent silken webs or cocoons, in which they took the chrysalis form immediately, and came forth as moths between the 8th and 25th of July. About the same time they were seen in the moth state in orchards, and in great numbers among the grass under fruit and forest trees. They soon entirely disappeared, nor have they been observed under any form since that time. In an article printed in the "Cambridge Chronicle," for July 23d, 1853, I gave to this insect the scientific name of *Rhinosia pometella*, the little Rhinosia or snout-moth of the orchard, with a scientific description of it in all its stages. That article, and another in the "Journal of the New York State Agricultural Society," for October, 1853, and also Dr. Fitch's account in the same Journal for September, 1853, may be consulted for further particulars.

The New York Weevil.—In some of the Western States, apple trees, and occasionally pear, plum and cherry trees, have been injured by a large weevil, specimens of which, taken from these trees in Michigan and Wisconsin, have been sent to me. This is the biggest weevil known in the United States, measuring half an inch or more in length. It is of a grey color, striped with white, and dotted with black spots on the back. The celebrated naturalist and voyager, John Reinhold Forster, first described it in 1771, under the name of *Curculio Noveboracensis*, the New York weevil. It belongs to the modern genus *Ithycerus*, and has also been described by Mr. Kirby under the name of *Pachyrhynchus Schonherri*. According to Mr. A. H. Hanford of Waukesha, Wisconsin, and Mr. T. E. Wetmore, of North Cannon, Michigan, this weevil attacks the buds and young shoots of the trees, gnawing them to the very pith, so that they break off, or wither and die. Mr. Wetmore informs me that their numbers are greater this year than heretofore, and apprehends great injury from them should they continue to increase. They are found on the trees in May and June; appear to be active during the night, and drop off by day when the trees are suddenly jarred. I have taken them in June and July on oaks and maples, but never met with them on fruit trees. Though not a very abundant species in Massachusetts, it is by no means rare, and has a wide range through the country, being found in most of the New England, Middle and Western States, in Canada, and in Newfoundland. There is an account and figure of it in the "Horticulturist," for August, 1853, page 386. The "Journal of the New York State Agricultural Society," for September, 1853, may also be consulted for notices of it by Dr. Fitch and myself.

Apate Bicaudatus.—This is the scientific name given by Mr. Say to a little beetle, whose injurious habits have lately been observed in Michigan and Wisconsin. Professor S. P. Lathrop, of Wisconsin University, and Mr. T. E. Wetmore have sent specimens to me, with accounts of the depredations of the insects, which are found burrowing in the pith of the young branches of the apple tree, during the spring. The branches above the seat of the attack soon die. These beetles are from one-quarter to more than three-tenths of an inch long, cylindrical, dark chesnut brown, roughened like a garter, on the fore part of the thorax, with short spines pointing backwards, and armed, in the males, with an incurved spine, near the tip of each wing-cover. Besides those sent to me from Michigan and Wisconsin, I have specimens from Ohio, Pennsylvania, and North Carolina; but have not met with any in New England.

The Oak-pruner (*Stenocorus putator*) occasionally attacks the small branches of the apple tree; and the blight beetle, *Scolytus*, or *Tomicus Pyri*, whose perforations blast and kill the branches of the pear tree, has also been found equally injurious to those of the apple tree.

Dr. William Le Baron, of Geneva, Illinois, has contributed some interesting observations on the *Bark-Lice*, or scale insects of the apple tree, to the "Prairie Farmer," for June, 1854. He finds that there is only one annual brood of these insects, that they are hatched in May, and that the females often produce from seventy to one hundred eggs. He thinks that remedies for the destruction of the insects should be applied soon after the hatching season.

[To be concluded.]

An Article for Children.

"WHAT'S THE USE."

"Where's Sam?" said Joe Dennet, coming into Mr. Powers' yard, and seeing Mr. Powers at the door. "Up in his study," answered Sam's mother. "And where's that?" asked Joe; "I did not know that Sam had a study." Sam's mother smiled, and told him to go into the garden, and maybe he would find it. He did so, and shouted "Sam, where are you?" "Hallo!" said a voice from above. Joe looked up, and saw his friend perched in the crotch of an apple-tree, with slate and book in hand.

"Come," said Joe, "the boys are going a-boating, and want you to go." "Can't," answered Sam; "I am trying to master this algebra; we all missed to-day." "Why it is Wednesday afternoon, and that is *our* time. I would not study, I am sure: what's the use?" asked Joe. "Well, for my part, I am bound to get this lesson the first thing I do," said Sam. "Pooh! it's too hot to study; beside, I hate algebra; what's the use puzzling your brains over x plus y?" "I think it is of use to get our lessons," said Sam. "What are you going to do after that?" asked Joe. "I am going to weed the onion beds." "Oh! it's too pleasant to work; what's the use tying yourself up here all the afternoon? I would not," said Joe Dennet. "Well, I think its of use to do what needs to be done," was Sam's answer.

This was a fair sample of Sam Powers and Joseph Dennot, two boys who lived in the same neighborhood. It is twenty-five years or more, since this kind of talk took place, and the boys are now men. Sam Powers is called a man of "iron will," because he lays plans and carries them out with a patience and energy which never gives up. He is one of the first business men in the State, and a truly pious man, too. How is it with Joe? He goes through life a man, just as he did a boy. If there is any extra exertion to be made in his business, he asks "What's the use?" and goes to it with so little heart that he is sure to fail. He is always complaining of hard times, and wondering how people get ahead so. As for his religion, he does not live as if it were of much use to him or any one else.

There are some boys who, when they have anything to do, or are called upon to do a little more than usual, try to shirk off by asking, "Oh! what's the use?" The fact is, boys, there *is use* in doing, like a man, what you have to do. There *is use* in getting your lessons, and getting them well, and making extra exertions to get them, if they are difficult. There *is use* in weeding the garden, chopping at the wood-pile, finding the cows, cultivating a taste for reading, and in doing what your parents ask of you. Whenever I hear a boy trying to excuse himself from duty, by asking, fretfully, "Oh, what's the use?" I mark him as a lazy, shirking, shuffling boy, who will be very likely to be good for nothing

when he grows up. You must have a hearty interest in your work, and always feel very suspicious of yourself if you find an inclination to *dodge* a duty with this meaningless excuse.—*Child's Paper.*

New Substitute for the Potatoes.

Translated from the *Revue Horticole*, Paris, Dec. 1854, by H. Meigs, Esq., Secretary of the Farmer's Club. N. Y.

DIOSCOREA BATATAS. (*Igname of China.*)

New observations relative to it.

We live at a time when it is not necessary to struggle forever against popular prejudice as to a new and useful thing in agriculture. If some resistance is experienced in our country population, yet enlightened men are now numerous enough everywhere to encourage a new and useful plant.

The great amelioration in our State by the use of the most perfect types of a race, borrowed from our neighbors and elsewhere, are incontestible proofs of advance. Culture, drainage, &c., are so many happy reforms in our domestic affairs, and in our comforts and manners.

We do not flatter ourselves with making popular at the first *onset*, the *Igname of China*; but we do hope that its introduction to general use will not be opposed, as the potato was for *nearly two hundred years!* Its malady is, we trust, but temporary. Malady might assail this new *Batatas*, but perhaps not; so that we may henceforth not fear a famine.

Five years ago the first *Dioscorea Batatas* was brought to us. It has attracted attention now almost everywhere, and the calls for them to plant are numerous from all quarters.

My mode of cultivating them.

Towards the middle of April, when I believed that we should have no more frost, I planted some of them in pieces and whole, in good light garden beds, at the Museum of Natural History. I set them about twenty inches apart every way; this was wrong—they should have been set much nearer together. The future alone will teach us what effect our climate may have upon it. All that I can now say is, that my plants have this year (1854) grown well, their long shoots being very vigorous and covered with thick foliage. They produced many flowers (all of which were male) about the beginning of August. At the end of August, the growth of stalks and leaves ceased, and they assumed that yellowish hue which indicated, after the middle of September, the approaching maturity of the tubercles.

I set apart some square feet of the plants for other experiments, while two of my lots were covered, one with strong poles about ten feet long, the other with poles about seven or eight feet long. The branches and stalks of the igname twine around these poles as beans do, and soon run beyond the length of their poles.

In the third lot I let them have their own way, and the vines did not root at their joints, and twisting together, grew nearly as long as those on the poles.

The tubers which I planted whole, gave remarkably vigorous plants, each of which gave a new tuber—of these, two were quite large. When pulled, one weighed nearly three pounds, (1 kilo. 360,) the other 1 kilo 160. The third was injured by the insect *Hanneton*. The original batatas which I planted were still on, very much wrinkled. The beds of cut tubers did not produce well, weighing on an average not over a quarter of a pound.

Of the whole, the result was from twenty-eight plants, each giving one tuber—on an average the tubers weighed about five ounces each. (345 qrs. 18.) We found on the whole, from fifty-seven plants, seventeen kilogrammes, or nearly forty-three pounds weight of tubers.

The result of these experiments shows, that a hectare can produce 6000, kilogrammes of igname, or that an acre may yield something like two hundred bushels. We think, from what we have seen of the growth, that ten inches apart every way will be room enough for the root —for this plant seems to live upon the air by its vines and leaves. The product of tubers was nearly double, our late usual crops of potatoes. These ignames are from ten to twenty inches long; the upper third of the roots very slender, about the size of our little finger. I think that this part should be reserved for planting. The digging of them is a difficulty. In China they always plant them in sandy soil.

I do not hesitate to prefer the Chinese igname to the common potato for quality; I believe the igname to be more nutritious. The flesh of it is as white as snow: it has no apparent fibre in it. By boiling it becomes so tender that under the lightest pressure it becomes a paste, like that made of the finest wheat flour. Cooked by steam, or roasting in hot ashes, it has the appearance and taste of the best of our common potatoes. Two pieces of the root as large as a common Dutch potato were boiled together, with a potato of same size, and the ignames were done in ten minutes, while the Dutch potato was twenty minutes in cooking. This is a valuable property, saving both time and fuel—and that is one reason why the potato was so much valued originally. And this igname keeps well from one year to another. The igname has been successfully cultivated in Algiers.

Many of the dioscoreas have the property of multiplying by these bulbs, which become detached from the plants when at maturity.—*Working Farmer.*

Book Notices.

SCHENCK'S GARDENERS' TEXT BOOK.—We have received from the publishers, John P. Jewett & Co., Boston, a copy of the above work, treating very fully of every thing appertaining to a well regulated kitchen garden, from the first selection of the site to the preparation of the soil, manuring, mode of planting the seed, tending and gathering the crop; also the methods of cooking and preparing for the table every variety of vegetables. It describes all the different varieties of vegetable seeds, often so puzzling to the gardener which to select from the extensive list of names and synonymes, and recommends such as are most desirable.

We copy in another column an extract on the "Selection of Seeds," also on their vitality or length of time they will continue fit to plant, which will be useful for reference hereafter. The present edition is the "fourth thousand." It contains over three hundred pages, is in a very portable form, and we think a very valuable treatise.

New Chinese and Japanese Plants.

The following is a list of seventeen cases of plants collected in China and shipped on board the Lexington, consigned to the Government of the United States:

4 plants of yellow or tea roses, 4 do. Light red roses,

4 do. Pink roses, 4 do. Lan fas or flower, 4 do. Blue Magnolia, 4 do. Qui Fas, 4 do. China grafted black roses, 4 do. Koco or small Magnolia flower, 4 do. China yellow aram, 4 do. Hymonnicalus, 4 do. Logan, 4 do. Guavas, fruit 4 do. Loquat, fruit, 4 do. Custard apple, fruit, 4 do. Sweet Whampee, fruit, 4 do. Sweet Carambola, or China gooseberry, 4 do. Acid Carambola, or China gooseberry, 4 do. Acid Whampee, 4 do. Pambalos, fruit 4 do. Mangres fruit, 4 do. Large Mandarin oranges, lace skins, 4 do. Small Mandarin oranges, lace skins, 4 do. China Mandarin oranges, hard skins, 4 do. Cumquats, fruits, 4 do. Large yellow persimmon, 4 do. Large round rose apples, 4 do. Large round red persimmon, 4 do. Small round red persimmon, 4 do. Small myrtle, 4 do. Large rose apple, 4 do. Small long rose apple, 4 do. Lyches, fruit and flower, 4 do. Papayas, fruit, 4 do. Very fine lace skin Mandarin orange, 15 do. Black tea, two varieties, 4 do. Nondescript, blue lily, 4 do. Red double head star lily, 4 do. China red lily, many heads, 4 do. China yellow lily, many heads, 4 do. China single head white lily, 4 do. Cymbidium.

The following plants are inclosed in boxes:

12 plants Nondescript, white small flower, 20 do. Lemon grass, 12 do. Peruvian crynam, 20 do. Small hymonnicalus, 20 do. Yellow day lily, 20 do. Benjamin flower, 3 do. Blue magnolia, 1 do. Round rose apple, large, 2 do. China dates.

One case containing a variety of plants collected in Japan and in the island of the Great Loo Choo; also one large Loo Choo plant not in case, and four tubs of water lily.

Two cases, one of sugar cane from Java, and the other of exotic plants from St. Helena, collected by Dr. James Morrow, agriculturist to the Japan expedition.

The plants were gathered under the direction of Commodore Perry. They are in pretty good condition. A few of them withered and died on their passage home.

Captain Glasson also brought home with him a real live Chinese from Hong Kong. He is a florist and gardener, and goes to Washington, to attend to the plants. He is about twenty years of age, and named Oqui. He speaks English a little, which he learned on the voyage, and says he is now an American. He was born at Canton, and is tolerably good looking.

The History of the Melon.

The history of the *watermelon*, so much esteemed for its delicious, and cooling juice, as well as that of the *muskmelon* or *cantaleup*, which is equally prized for its rich aromatic pulp, may be traced back to remote antiquity. The former, which is generally considered as the melon of the Jews, mentioned in various places in the Bible, is believed to have originated in Egypt, or Southern India, where it has been cultivated from time immemorial. It would appear that it was unknown to the ancient Greeks and Romans, as no definite information respecting it can be gleaned from their authors. The muskmelon, which is represented to have been a native of Asia, was known to the Greek and Roman physicians, and its properties and uses described by them at length.

The kind of muskmelon most esteemed among amateurs in various parts of Europe, and described, is the "Cantaleup," so called from a place about fourteen miles from Rome, the country seat of the Pope, where this fruit has long been cultivated. This variety is stated to have been brought hither from that part of Armenia which borders on Persia, where it grows in the greatest perfection and abundance. The flesh of this melon when fully matured, is delicious, and may be eaten with safety without injury to the dyspeptic or those of the weakest stomachs. The form of cantaleups is generally roundish with a rough, warty, or netted outer rind, or skin. The size of the plant is rather small, and the flesh, for the most part of a yellowish color, though with some it is green.—*Patent Office Report.*

Wheat Midge.

The following account of this fly is abridged from the second edition of Dr. Harris' treatise on insects:

It is a very small, orange-colored gnat, with long, slender, pale-yellow legs, and two transparent wings, reflecting the tints of the rainbow, and fringed with delicate hairs. Its eyes are black and prominent. Its face and feelers are yellow. Its antennæ are long and blackish. These insects vary much in size. The largest females do not exceed one-tenth of an inch in length; and many are found, towards the end of the season, less than half this length. The males are usually rather smaller than the females, and somewhat paler in color.

The time of their appearance in the winged form, varies according to the season and the situation, from the beginning of June to the end of August. In most parts of New England, where wheat is cultivated, immense swarms of these orange-colored gnats infest fields of grain towards the last of June. While the sun shines, they conceal themselves among the leaves and weeds near the ground. They take wing during the morning and evening twilight, and also in cloudy weather, when they lay their eggs in the opening flowers of the grain. New swarms continue to come forth in succession, till the end of July; but the principal deposit of eggs is made in the first half of July, when late sown winter wheat and early sown spring wheat are in the blossom or milk. The flies are not confined to wheat alone, but deposit in barley, rye, and oats, when these plants are in flower at the time of their appearance. I have found the maggots within the seed-scales of grass, growing near to wheat fields.

The eggs hatch in about eight days after they are laid, when the little yellow maggots or grain-worms may be found within the chaffy scales of the grain. Being hatched at various times during a period of four or five weeks, they do not all arrive at maturity together. Mrs. Gage informs me that they appear to come to their growth in twelve or fourteen days. They do not exceed one-eighth of an inch in length, and many, even, when fully grown, are much smaller. From two to fifteen or twenty have been found within the husk of a single grain, and sometimes in every husk in the ear. In warm and sheltered situations, and in parts of fields protected from the wind by fences, buildings, trees or bushes, the insects are said to be much more numerous than in fields upon high ground or other exposed places, where the grain is kept in constant motion by the wind. Grain is commonly more infested by them during the second than the first year, when grown on the same

ground two years in succession; and it suffers more in the immediate vicinity of old fields, than in places more remote. These insects prey on the wheat in the milky state and their ravages cease when the grain becomes hard. They do not burrow within the kernels, but live on the pollen and on the soft matter of the grain, which they probably extract from the base of the germs. It appears, from various statements, that very early and very late wheat escape with comparatively little injury. The amount of which, in other cases, depends upon the condition of the grain at the time when the maggots are hatched. When the maggots begin their depredations soon after the blossoming of the grain, they do the greatest injury; for the kernels never fill out at all. Pinched or partly filled kernels are the consequence of their attacks when the grain is more advanced. The hulls of the impoverished kernels will always be found split open on the convex side, so as to expose the embryo. This is caused by the drying and shrinking of the hull, after a portion of the contents thereof has been sucked out by the maggots.

Towards the end of July, the full-grown maggots leave off eating, and become sluggish and torpid, preparatory to moulting their skins. The torpid state lasts only a few days, after which the insect casts off its skin, leaving the latter entire, except a little rent in one end of it. Sometimes the maggots descend from the plants, and moult on the surface of the ground, where they leave their cast skins. Late broods are sometimes harvested with the grain, and carried into the barn without having moulted. [The seasons in New England are about three weeks later than in this latitude.—Ed.]

After shedding its skin, the maggot recovers its activity, and writhes about as at first, but takes no food. It is shorter, somewhat flattened, and more obtuse than before, and is of a deeper yellow color, with an oblong greenish spot in the middle of the body. Within two or three days after moulting, the maggots either descend of their own accord, or are shaken out of the ears by the wind, and fall to the ground. They do not let themselves down by threads, for they are not able to spin. Nearly all of them disappear before the middle of August; and they are very rarely found in the grain at the time of harvest. [New England, not Pennsylvania. Ed.]

Having reached the ground, the maggots soon burrow under the surface, sometimes to the depth of about an inch, those of them that have not already moulted casting their skins before entering the earth. Here they remain, without further change, through the following winter. During the month of May, I have seen specimens still in the larva form in the earth wherein they had been kept during the winter. It is not usually till June that they are transformed to pupæ. This change is effected without another moulting of the skin; not the slightest vestige of the larva skin being found in the earth in which some of these insects had undergone their transformations. Moreover, the pupa is entirely naked, not being enclosed either in a cocoon or in the puparium formed of this outer skin of the larva, and it has its limbs and wings free or unconfined. The pupa state lasts but a short time, a week or two at most, and probably, in many cases, only a few days. Under the most favorable circumstances, the pupa works its way to the surface, before liberating the included fly; and when the insect has taken wing, its empty pupa skin will be seen sticking out of the ground. In other cases, the fly issues from its pupa skin in the earth, and comes to the surface with flabby wings, which soon expand and dry on exposure to the air. This last change occurs mostly during the months of June and July, when great numbers of the flies have been seen, apparently coming from the ground, in fields where grain was raised the year before.

The Remedies, or means of preventing the ravages of this insect, are very similar to those recommended for the Hessian fly,—there is no hope that a specific will be found for either.

Smoking them out of a field, by means of smouldering fires kept burning on the windward side, has been recommended, but we have never heard of its being tried, and never expect to, more than once; the same may be said of fumigating the crop with *sulphur*, and dusting it with *lime*,—the last has been tried, and found of no avail whatever.

Catching the flies, with a long net or *seine*, made of ropes and fine gauze, was gravely recommended by Dr. Fitch, as the plan he proposed to employ on the next visitation of the insects in his vicinity; and, said he, "I shall be much disappointed, if *countless millions* are not gathered into the net." This was written ten years ago, and we have not yet seen any report of the Doctor's success at wholesale fly catching. We presume that if "countless millions" were caught in his net, there were as many billions that escaped!

Parasites are said to destroy a considerable portion of the yellow worms or maggots, but we think that the proportion killed in this way is much less than of the Hessian fly. *Birds*, we have no doubt, consume a much larger number, as these little friends of the farmer may be seen busily at work all day long, picking the larvæ out of the wheat heads, where the crop is most affected.

Starving the insects, by omitting to sow wheat in a given district for one or two seasons, has been recommended as a certain remedy; but it is difficult of practice, as it would be necessary for the farmers of quite a large district to combine for this purpose, and consent to purchase their wheat or flour for a year or two, which many will not willingly do.

Early sowing and good culture, so as to secure the maturity of the grain before the worms have hatched, or become old enough to injure it, is the surest of all methods, we believe, and the most easily practiced. Wet and cold clayey lands are especially favorable to the ravages of this insect; hence we have a new argument in favor of thorough draining and deep plowing.

In some of the more northern States, very *late sowing* and the use of spring wheat has been found advantageous, as the crop is thereby prevented from blossoming until after the time for the insect to deposit its eggs has passed.

The Peach Crop.

The Pomologists of the east, as is well known, assert that a temperature of from fifteen to twenty degrees below zero destroys the vitality of the fruit bud in the peach and other trees, and it is feared the recent ex-

tremely cold weather has done much damage to the approaching peach crop in the middle and northern counties in this State, as in many localities the mercury was lower than above indicated.

We observe that L. B. Langworthy, of Greece, New York, states, in the Rural New Yorker, that he has examined branches of ten different kinds of peach trees, from the earliest varieties to the latest clings, and in over one hundred buds found the germ black and dry and not one alive,—from which fact he is persuaded that the peach crop in that region is lost for this year at any rate.

Planting Trees.

There are several requisites, to successful planting of trees and shrubs, if the object is to make them, *thrive*, *grow*, and *bear* fine fruit or foliage. We have frequently adverted to these in the pages of the Farm Journal, and only now remind our readers, that if there is one error more fatal than the rest, or more frequent it is *planting too deep*. After the earth settles the tree should be no deeper than before. The way to prevent it from being blown about and disturbed by the winds is to secure it by a stake, not by burying in the ground, where the air cannot penetrate.

A certain Professor Comstock, has been going the rounds in New York State, and we believe petitioning the legislature for one hundred thousand dollars, as an inducement to reveal what he calls a great secret of vegetable life, of his own discovery. The good people there seem to have been willingly paying two dollars, as a kind of initiation fee, to his lectures, when the great secret turns out to be nothing more than the aforesaid fact, avoid deep planting, known before the Professor was *born*, and we dare say recited by Virgil in his Georgics.

The small space or neck of the tree just above where the roots diverge, the Professor calls the "seat of life," and which he thinks should not be choked off under ground. A great discovery truly!

Draining Tile and Draining.

There are very few farms, on which more or less acres are not lying unprofitably and unproductive for the want of proper drainage. The constant eye sore of a wet field or meadow, on which nothing grows but the rankest and coarsest herbage, is allowed to remain year after year, when a very small comparative outlay, would convert it into the most productive part of the farm. Stagnant water at the roots of growing crops, is as detrimental to *them*, as to animals. The temperature of the soil, where water cannot pass off is so reduced, that vegetable decomposition is retarded, and plants and crops are actually starved off, and dwindle away in the midst of abundance, because the food is not in such a condition as to be assimilated and taken up by the absorbent vessels. Give such places a vent for the surplus water, allow the warm sun to penetrate the soil and act upon the mass of vegetable food, which has long lain dormant, and the effects will be surprising. We have known many a farm sold at a low price, on account of the supposed great drawback of a wet meadow. An estimate is made of the number of acres of woodland, acres of arable land, and waste land, the latter never having been drained or made productive, is supposed not to be capable of being so, and when a very trifle, would convert it into the most productive part of the farm. In many places, where stone is scarce there has been an obstacle to under ground and surface draining, which is now remedied by the manufacture of draining tile. This we have ascertained, can now be purchased at the agricultural warehouses very cheaply, the best sole tile, four and a half by five inches, costing not over forty dollars per thousand feet, and smaller sizes much less. Two or three manufacturers have lately started in the vicinity of Philadelphia.

These covered drains offer no obstacle to culture, perform their work under ground silently and effectually and in one case we have lately heard, where they were laid down last season on a large scale, have added at least fifty per cent to the value of land.

Before our young farmers think of moving to the far west, and before they *ought* to complain of farming not making money fast enough, we think they are bound to turn to the best account, the means of production within their reach. It is possible to hold a sixpence so close to the eye, as not to see the dollar beyond, which we think is the case with neglected draining. *Productive* industry should be the watchword, that industry, which can turn every thing to best account, convert the stubborn and useless glebe, into a fertile and remunerating channel, which will make two blades grow instead of one, and *use*, not abuse, or neglect the means of wealth, and support, which nature throws so liberally before the farmer.

Crawford County Agricultural Society.

We are indebted to A. Lyle White, Esq., editor of the American Republican Banner, for the following:—At the annual election of the Crawford County Agricultural Society, held in Conneautville, on Monday, January 1st, 1855, the following persons were elected officers for the ensuing year:—President, J. E. Patton, Vice President, Jas. L. Beatty, John F. McDowell, Wm. T. Horsmer, Recording Secretary, A. J. Foster, Corresponding Secretary, J. W. Patton, Treasurer, Wm. Power, Executive Committee, A. J. Whipple, T. J. Lowry, Asa Sturtevant, John Thompson, and James Sterling, Auditors, Frank Mantor, Daniel Hammon and Alva Beeman.

Hints for the Season.

Plow deep, and *pulverize thoroughly* before seeding by repeated harrowings. The seed will grow and vegetate much better, be brought into contact, and extract nutriment from more particles of soil, which will also be more open to the fertilizing influence of the atmosphere. *Use plenty of seed*, the first cost is trifling compared with the increased aggregate yield, at harvest time.

Prepare ground speedily for at *least* an acre of root crops, Sugar Beet, Carrots, and Ruta Baga. These will all be wanted next winter. Deep plowing, heavy manuring, and fine pulverization are essentials in root culture.

Roll pasture and mowing grounds.

Feed liberally horses and working cattle, with grain while on duty.

Spread plaster early so as to take advantage of spring rains.

United States Agricultural Society.

The third annual session of this society commenced Feburary 21, 1855, in the "East Room" of the Smithsonian Institution. Twenty-six States were represented by credited delegates from State and county societies, and there was also a large number of individual members of the society.

The Hon. M. P. Wilder, of Mass., President of the society, on taking the chair, delivered a pertinent address, in which he recapitulated the operations of the society during the past year, including the cattle show at Springfield, Ohio. The address was received with applause, and has been printed for distribution in pamphlet form.

On motion of Mr. King, of New York, a committee of one from each State represented, was chosen by the President, to nominate a board of officers for the ensuing year.

A letter was read from Col. Selden, resigning his office as treasurer, and, accompanied by securities for the funds of the society deposited in the bank, was referred to Messrs. Wager, of New York, Calvert, of Maryland, and Worthington, of Ohio. They subsequently reported, complimenting Col. Selden, for his integrity, and expressing confidence that the funds are secure.

Resolutions were offered by Messrs. Holcomb, of Delaware, and Kemmel, of Maryland, which were sustained by Messrs. Calvert, Peck, and Kennedy, of Maryland, King of New York, Jones, of Delaware, and then laid on the table for future discussion.

Messrs. Wager, of New York, Kennedy, of Pennsylvania, Proctor, of Massachusetts, Steadman, of Ohio, and Jones of Delaware, were appointed a committee to receive and report on amendments to the constitution.

Mr. Calvert, of Maryland, offered a resolution recommending political action on the part of agriculturists, and supported it by able remarks.

He was followed by Messrs. French, of New Hampshire, Dyer of Connecticut, and Kennedy, of Pennsylvania, and the resolutions were laid on the table for further discussion.

Mr. Jones, of Delaware, presented a memorial, showing the effect of legislation on agriculture, and embracing a mass of historical facts.

After having been read, it was, on motion of Mr. King, of New York, placed on the files of the society.

Mr. Clenson, of Maryland, introduced a resolution recommending agricultural education.

An informal discussion of the potato rot, deep plowing, and other matters of great agricultural interest, followed in which a large number of gentlemen participated. Many facts of importance were elicited, as gentlemen from various sections related their "experience," and the debate was continued until 4 o'clock.

In the evening the society were favored by a lecture from their vice president from Virginia, the venerable George Washington Parke Custis. His eloquent narrative of the illustrous "Farmer of Mount Vernon" was listened to with marked attention by a large audience, and was warmly applauded.

After the lecture, a large number of ladies and gentlemen were introduced by the President to the orator.

After the lecture, the officers and committees were unexpectedly entertained at the National Hotel, by Colonel C. B. Calvert, the proprietor of "Riversdale." A sumptuous repast graced the festive board, and the festivities were prolonged to a late hour.

SECOND DAY.

This morning the society met 10 o'clock, and, after the report of Mr. King, of New York, chairman of the nominating committee, elected the following officers for 1855.

PRESIDENT, Marshall P. Wilder, of Massachusetts.

VICE PRESIDENTS, John D. Lang, Maine, H. F. French, N. H., Fred. Holbrook, Vt., B. L. Erench, Mass., Jos. J Cooke, Rhode Island, John T. Andrew, Conn., Henry Wager, New York, Isaac Cornell, New Jersey, Isaac Newton, Pa., C. P. Holcomb, Delaware, H. G. S. Key, Md., G. W. P. Custis, Va., Henry K. Burgwyn, N. C., James Hopkinson, S. C., D. A. Reese, Ga., A. P. Hatch, Ala., A. G. Brown, Miss., I. D. B. DeBow, La., Gen. Whitfield, Kansas, J. T. Worthington, Ohio, B. Gratz, Ky., M. P. Gentry, Tenn., Jos. Orr, Ind., J. A. Kinnicutt, Ill., Thos. Allen, Mo., T. B. Flourney, Ark., J. C. Holmes, Mich., Jackson Morton, Fla., T. G. Rusk, Texas, J. W. Grimes, Iowa, B. C. Eastham, Wis., J. M. Horner, Cal., Jos. H. Bardley, D. C., S. M. Baird, New Mexico, H. H. Sibley, Minn., Joseph Lane, Oregon, J. L. Hayes, Utah, Mr. Giddings, Nebraska.

EXECUTIVE COMMITTEE, John A. King, New York, C. B. Calvert, Md., A. L. Elwyn, Penn., J. Wentworth, Ill., B. Perley Poor, Mass., A. Watts, Ohio, John Jones, Del.

SECRETARY, William S. King, Boston, Massachusetts

TREASURER, B. B. French, Washington, D. C.

On a report of the executive committee, Dr. Elwyn, of Penn., Henry Wager, of New York, Dr. W. T. G. Morton, of Mass., Col. Anthony Kimmel, of Md., and Chas. L. Flint, of Mass., were appointed delegates to attend the coming Industrial Exhibition at Paris.

After the election, the disscussion upon the resolution offered by Mr. C. P. Holcomb, of Delaware, on the "Reciprocity Treaty" as injurious to the agricultural interests of the Republic, took place. Messrs. Holcomb, Peck, King and Jones, participated in the disscussion.

This evening, the Hon. G. P. Marsh lectured on "Notices of the Rural Economy of Continental Europe."

THIRD DAY.

After the elections yesterday, the Society discussed a resolution offered the day previous by Mr. C. P. Holcomb, of Delaware, denouncing the "Reciprocity Treaty" as injurious to the agricultural interests of the republic, took place, Messrs. Holcomb, Peck, King, Waters, Elwyn, Kennedy, Steadman, Cowley, and other gentlemen participating. The resolution, as finally amended and passed, reads:

Resolved, That we object to the doctrine of free trade for agriculture and protection for other interests.

Col. Calvert, of Maryland, offered the following preamble and resolutions, which he supported in an able and earnest manner, depreciating all applications to Congress, and urging political action on the part of agriculturists, as calculated to *command* success.

The resolutions, after having been discussed by Messrs. Kennedy of Pennsylvania, Jones of Delaware, and King of New York, were carried:

Whereas, The prosperity of a country is in proportion

to the improvement of its agriculture, therefore

Resolved, That agriculture should be the first interest considered in legislating for the general welfare, and that such legislation should be had as will foster and protect this interest, which is paramount to all others.

Resolved, That the time has arrived for the agriculturalists of the whole country to meet in convention, and determine for themselves what legislation is necessary for their protection.

Resolved, That such a convention, to be composed of delegates from each State of the Union, be earnestly recommended by this Society, in order that an agricultural platform may be established, which will meet the views of, and be sustained by, the whole body of agriculturalists as a profession.

Mr. Wager, of New York, submitted a report on the proposed amendments to the constitution, which was discussed by Messrs. Fay and Waters, of Massachusetts, Cook of Rhode Island, King of New York, Hamilton of New Jersey, Calvert of Maryland, and Worthington of Ohio.

The constitution was so amended as to have the payment of ten dollars constitute life membership.

Various reports were read, among them one on the *Chess in Wheat*, from the Smithsonian Institution; on *Agricultural History*, by B. P. Poore; on *Mr. Glover's Collection*, by Mr. Peck; and on *Western Fruits*, by Dr. Warder.

Mr. Peck, of Maryland, reported that the committee appointed to urge upon Congress the purchase of Mr. Glover's collection of modelled fruits, had had an interview with the proper committee of Congress, and received assurances that the matter would receive their attention.

A communication from Professor Henry was read, detailing experiments on the culture of the "Oregon Pea," made under the direction of the Smithsonian Institution, at the request of the Society. The results at Savannah proved it worthless for that region.

A paper on "Alderney Cattle," by Dr. W. J. G. Morton, was read and referred. Also, a paper on "Potato Oat," from New York.

Dr. Warder, of Cincinnati, exhibited over thirty different varieties of western apples, which he descanted upon with his wonted accuracy.

An invitation was received and accepted inviting the Society to visit the Metropolitan Mechanics' Institute to day at 11 o'clock. Invitations to visit the office of the Coast Survey and the agricultural room at the Patent Office were also accepted.

After some remarks by Mr. Custis, giving his experience in growing wheat in Virginia, the Society adjonrned until 7 o'clock, when the Hon. G. P. Marsh had been invited to address them on the *Rural Economy of Continental Europe*.

The lecture was listened to with great interest, embodying, as it did, a great amount of original information, and its publication will constitute a valuable addition to agricultural literature.

Dr. Warder followed, with an eloquent lecture on hedges, replete with practical information.

FRIDAY MORNING, March 2.

The Society met at 10 o'clock, and passed an hour in familiar conversation on agricultural subjects.

After a discussion on the appointment of Commissioners to the Industrial Exhibition at Paris, the matter was referred to the Executive Committee.

On motion of Mr. Poore, of Massachussetts, it was unanimously

Resolved, That the thanks of the United States Agricultural Society, be presented to the Regents of the Smithsonian Institution, for the facilities afforded for holding this session. The utility of this Institution, in thus serving as a nucleus, around which all useful associations can rally, at the capital of our Republic, shows the wisdom of the course pursued by the present Regents.

Col. Kimmel, of Maryland, read a curious extract from the Maryland Gazette, of September 8, 1747, showing that "cattle shows" were established at Baltimore in that year.

On motion of Mr. Waters, of Massachussetts, it was unanimously

Resolved, That the thanks of this Society be proffered to the Hon. Geo. P. Marsh, for the beautifully written and exceedingly interesting lecture he was so good as to present to us last evening, and that Professor Henry be requested to wait on him and request a copy for publication.

On motion of Col. Calvert of Maryland, it was unanimously

Resolved, That the thanks of this Society be presented to Dr. Warder, for his interesting lecture on the cultivation of hedges, and that he be requested to present a copy of the same for publication in the transactions of the Society.

At eleven o'clock, in accordance with their acceptance of the invitation, the Society adjourned to visit the exhibition of the "Metropolitan Mechanic's Institute."

After visiting the Exhibition yesterday the society returned to the "East Room," and on motion of Mr. King, of New York, it was

Resolved, That the thanks of the society be presented to the officers of the Metropolitan Mechanics' Institute, for their polite invitation to attend their exhibition, which they have visited and examined with great pleasure.

After sone debate, in which a strong desire for concerted action on the part of American Agriculturists was manifested, it was on motion of Col. Calvert, of Maryland,

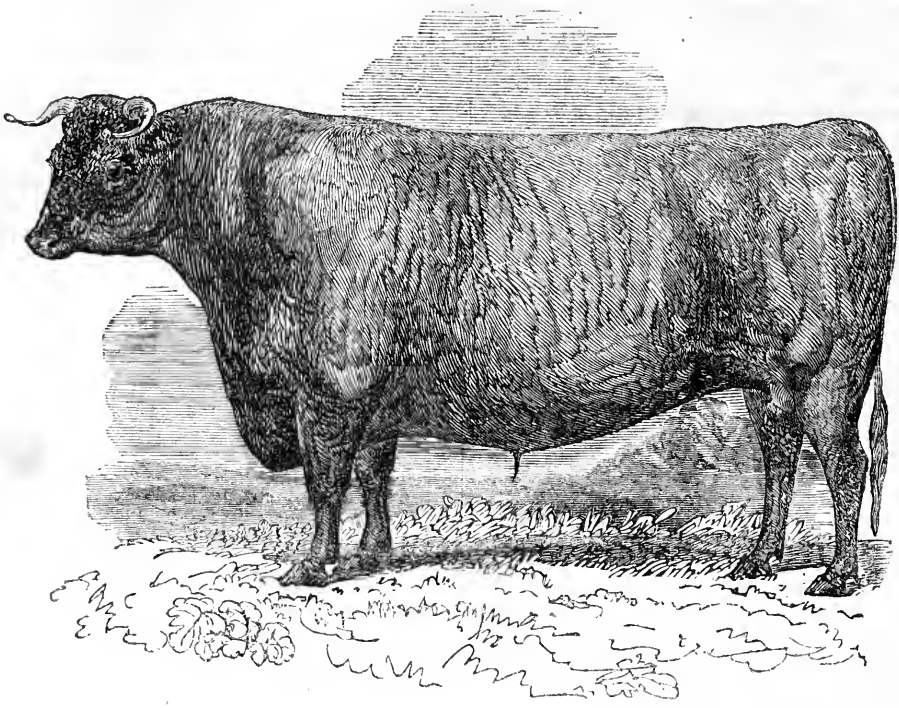
Resolved, That the first Friday after the next annual meeting be fixed for the assembling of the Agricultural Convention, and that the press be requested to urge the importance of the subject.

Resolutions were passed complimenting the agricultural press, and urging its conductors to consider political economy, and urge united action on such matters connected with it as their judgement may suggest.

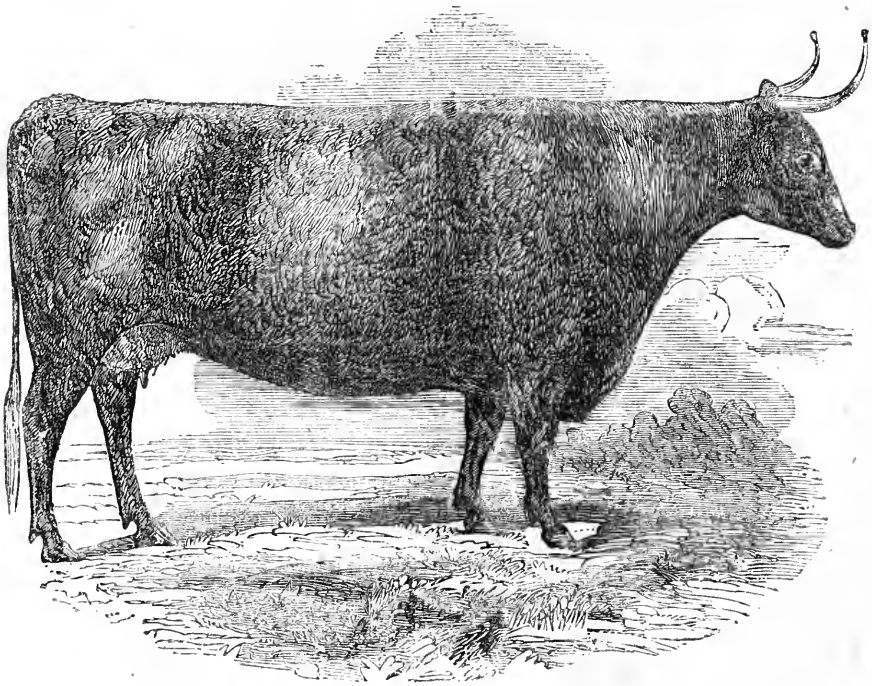
On motion of Mr. Taylor, it was

Resolved, That the thanks of the National Agricultural Society, be tendered to the Hon. Mr. Morton, of the United States Senate, for his able report upon the subject of an Agricultural Department.

Resolutions were passed complimentary to President Wilder; of the Smithsonian Institution; to Lieut. Maury, (for an invitation to visit the Observatory;) to Mr. King, the Secretary of the society; and to Mr. Poore, of the executive committee.



DEVON BULL "PLOUGHBOY."



DEVON COW CHERRY.

C. P. Holcomb's Devons.

The opposite engravings by Clarkson, represent portraits of a superior Devon Bull and heifer, from a late importation, owned by C. P. Holcomb, near New Castle, Delaware. While his reputation as a skilful and successful farmer, is coextensive with the country, his large and beautiful herd of Devons, to which breed in the commencement of his career as a farmer his attention was first drawn, have attracted visitors and purchasers from every section of the Union.

Those of our readers who have been in the habit of attending agricultural exhibitions in this, and the adjoining states of Delaware and Maryland, are familiar with Mr. Holcomb's Devons. We believe they have never missed taking premiums. Each breed of cattle, Durham, Devon, Alderney, &c., have their particular excellencies for different locations, and purposes, as well as their warm advocates.

While *neither* does, nor can, combine every advantage that may be wished for, they each have peculiar merits. and which differ so much that no *comparison* can fairly be made.

The Devons are proverbial for hardiness, and as oxen, are entirely unrivalled. Good working oxen are very much in demand, and are selling at high prices the present season. We have known within a few days, a pair to sell for $200, and $150 to $175 has not been uncommon. This is probably one reason why Devons are now attracting so much inquiry and attention. They are a beautiful and valuable breed. We should be pleased to hear from our friend Holcomb as to the milking qualities of his cows.

The following is the pedigree of Plowboy and Cherry.

Ploughboy, was calved June, 1850; sire Springfield; grand sire, imported Eclipse, (191); dam Edith, (679.) Ploughboy took the first prize at the Maryland Show, 1854.

Cherry, calved May, 1849; sire, Springfield, bred by George Patterson, Esq.; grand sire, Eclipse; dam Beauty by Granby—took the first prize at the Maryland Show 1853.

Work for the Month.

Farm.—Owing to the backwardness of the spring, much of the labor usually performed in March has been necessarily postponed to April. Oats should be sown as soon as the ground will permit. Ground intended for corn not already done, should be plowed and subsoiled as soon as possible, before it becomes dry and hard. As fine pulverization is of great account, those plows should be used which tend to this end. The Michigan Double Plow is the best we have seen for this purpose.

Early Potatoes should be planted in a warm situation. If a few rows be planted every week or two, a portion of the crop is almost certain to "hit the season," and yield well. Prepare the ground for root crops and for sowing corn for fodder.

Stock should now have particular attention instead of being neglected as is too often the case. Ewes and lambs should have a small quantity of grain and roots daily, and should be allowed to run on high and dry pasture land. Horses that have been standing idle all winter, are liable to fall off in flesh at this season when put to constant work, unless very well cared for. Have salt in the reach of all animals, to lick at pleasure.

Fruit Orchard:—Trees may still be planted this month and in doing so, cut off all bruised and broken roots; make the cut from the lower part, so that the cut surface may be down. Head in, by cutting off the ends of branches of large trees. See that the worm is not at work at Peach trees. If the earth was removed from the body of the trees last fall, put a shovel full or two of wood ashes around each tree, and return the earth that was taken away. Quince trees should be dug around and well manured; salt scattered under them answers an excellent purpose in producing fair fruit. Gooseberries, currants and grape vines two years old, from cuttings, should now be transplanted in places; in digging the holes, make them large and deep, filling in what was before occupied with subsoil with surface loam, leaving the subsoil on the top to become improved by the contact of sun and air. These should be heavily manured, as the gooseberry and currant are rank feeders. All transplanted trees should be mulched by putting around the roots manure hay or straw. Grafting apple and pear trees may still be continued till the leaves begin to expand, if the grafts were cut in season and properly taken care of. Cherries, plums and peaches should have been done last month. Remove all insects from trees, and apply a wash of equal parts soft soap and lye, and remember that trees need cultivation.

Vegetable Garden.—Finish planting out esculents for seed, and at a distance from others of the same genus. All kinds of seeds may usually be planted this month, reserving such as are tender of frost till the last. Make plantations of asparagus. Plant out rhubarb, horse radish and onion setts. Sow peas, radishes, and lettuce, every few days for a succession. Plant out cabbages, cauliflower and lettuce from cold frames. Plant Lima beans, cucumbers and melons in pots, under frames or in inverted sods, to set out when the weather is settled. Transplant medicinal herbs, and sow seeds for more. Keep the ground hoed and stirred and free from weeds.

Flower Garden.—All such work as pruning roses, and flowering shrubs, honeysuckles and creepers of all kinds, laying sod, planting box edging, transplanting herbaceous plants, manuring and digging the flower beds, should be concluded this month. Continue to plant evergreens, and all kinds of shrubbery. Wiegilia Rosea, Forsythia Viridissima, Spirea Reevesii, and Prunifolia, bloom before the earliest rose. If the weather is suitable, flower seeds may be sown on a warm border the latter part of the month. A good method to plant them is to break the soil very fine, (if the soil is of a clay nature, mix a little sand to loosen it, otherwise the seeds will not be able to germinate,) then take a six inch flower pot inverted, and press the soil, sow the seed in the ring made by the flower pot. If the seed is very fine, merely pressing it with the flower pot will be found sufficient; other kinds should have a little soil strewed lightly over them. A good lesson is to be learned on this subject if we observe the successful germination of seeds dropped from the parent plant. Tulips,

hyacinths, Narcissus, &c, may be planted the early part of this month. Plants that have been wintered in cellars should be brought out the latter part of the month; but previous to that they should have fresh air admitted to them as freely as possible.

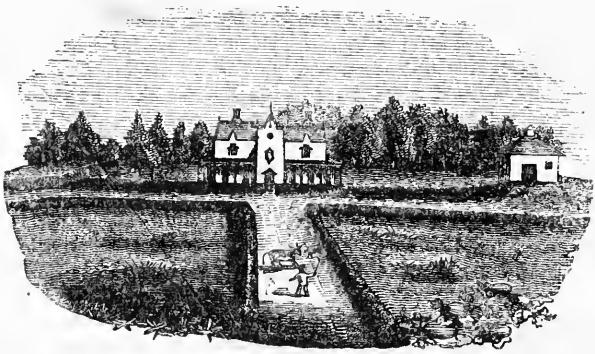
For the Farm Journal.

The Moon Theory Exploded.

In August 1852, to test the theory of Lydia Jane Pierson, that briars, bushes, &c., were more certainly destroyed by being cut in the old of the moon in August where its place is in Leo, than at other times, I made the trial on a field too stony to be plowed, on which were some bunches of briars, the bunches that were on one-half the field were cut in the afternoon of the 14th of August, being the old of the moon, the change taking place next day and being the first day of the sign being in Leo—the other half were cut on the 23d, about the first quarter The result was, that the cutting was very effective in weakening the briars, for they were not entirely killed, but on closer examination there was no perceptible difference in the effect from cutting at the different times. I believe August is a proper time to cut up briars for the purpose of destroying them, and that the moon's place in the ecliptic need not be attended to.

At the same time I provided many blocks of wood about three inches square and an inch thick, placing one each morning on a tough grass sod where the grass made little growth at that season, for the purpose of showing the moon's power or want of power to depress the blocks when the moon points down according to the almanac makers, or to raise them when the moon points up. I had purposed to continue putting down a block each morning for several months, but it was only continued till the 20th of September when I left home and was away for a considerable time and on my return found that those that I had put down, had been displaced, and I did not again commence. I would recommend this last experiment to the attention of the curious and scientific enquirer, not that I expect that the moon would be implicated in the derangement, but that the causes that have produced effects which she has been charged with may be discovered. A. W. C

Montgomery county.



View of Osage Orange Hedges.

The above cut was intended to be placed in connection with an article on Osage Orange Hedges, on page 103 of our present number, but was not received in time. It presents a view of a property upon which these hedges are growing. Our friends in reach of Philadelphia, desirous of witnessing them growing in perfection, have only to call on James Gowen, Esq., President of the Pennsylvania State Agricultural Society, at his beautiful farm at Mount Airy, near—or rather in—this city, who we doubt not will take pleasure in showing them, as well as some other things of interest to the agriculturist to be seen there.

Our Native Oaks.

Among the large variety of trees planted out annually for shade or ornament, it is much to be regretted our native oaks are so lightly esteemed, and we can think of no reason for it, but a general impression which prevails that they are of so slow growth. From our own observation, when planted as trees always should be, they are in this particular but very little, if any, behind many others more often enquired for.

We have frequently noticed with great pleasure, the oaks in the extensive ornamental grounds—over thirty acres—attached to Friends' Haverford School in Delaware county, a few miles from Philadelphia, as well as the profusion of other *native* trees—ash, beach, poplar, elm, maple, pines, firs, &c. These grounds were planted about twenty years ago, and we have never seen elsewhere a more complete exemplification of the results of *good* planting. Many of them now, in respect to size, come up to the idea usually understood by *forest* trees. The circle may still be distinctly seen, indicating the size the holes were dug, from six to eight feet in diameter The trees when planted, we understand, were about the ordinary size, and, in addition to the large holes, properly prepared soil was also plentifully used, and the result of the skilful management of the gardener, who was an Englishman, has been a rapid and symmetrical growth that we have not seen equalled elsewhere.

The oaks are now nearly as large as many of the other trees, although several of the species are those of slowest growth, such as Quercus, Bicolor obtusiloba, Alba and Nigra. Of Q. macrocarpa there are several specimens of great beauty about thirty feet high, with

fine symmetrical heads, not surpassed in this respect by any others in the large collection. They bear fruit abundantly every season.

Oaks we all look upon as the pride of our American forests, and they are so spoken of by foreigners. There is a majesty and grandeur about a venerable oak, which has had space to extend its massive branches, not equalled by any other of our native trees, and which may well be regarded with some national pride. They are a fair rival to the old English elms, so prominent a feature of their park scenery, about which they boast so much and value like their patents of nobility.

Oaks are well adapted for shade and ornament in the landscape by their broad leaves, various hues, variety of habit and mode of growth, and, so far as we know, are yet free from insect ravages. Their hardiness is proverbial, and we hope soon to see them more generally planted. Among the different species, we would recommend the macrocarpa, or mossy cup, desirable both for its foliage and beautiful fruit, Coccinnea oscalet oak very attractive for its deep crimson leaves in the fall, Tirctoria or black oak, Falcata or Spanish oak, Nigra or black Jack, and Alba or white oak. Q. nigra is of rather slower growth than the others, but has very handsome, large and thick, glossy leaves, five to eight inches long, obscurely lobed. Quercus Phellos, or willow oak, so named from the peculiar conformation of the leaves, is also a beautiful species; and Quercus Palustris, generally found in wet places, but also grows finely on dry soil. It has long and often pendulous branches. Will some of our readers sends us the measurement of any unusually large oak trees in their respective neighborhoods, in order to make a record of them in the Farm Journal? There is a white oak at Bartram's garden, near Philadelphia, eighty feet high by thirteen feet in circumference. What part of Pennsylvania can beat this?

What is the Matter?

Mr. Batchan of the Ohio Cultivator, seems to have but little love for the United States Agricultural Societp, if we may judge from the tone of an article in his last number. Can it be that he has not yet forgiven the Society for holding its exhibition at Springfield, and overshadowing the Ohio Agricultural Society last season?

Mowing Machines and Lime Spreaders Again.—A Reply.

Mr. J. L. Darlington:—I observe in the March number of the Farm Journal, an article on the above subject, from your correspondent near Penningtonville, Pa.

He appears to have had very bad luck in procuring machines, or implements as he terms them; and seems to censure the printers for publishing such "exaggerating accounts of the wonderful performances of machines."

As I know but little about his mowing machine, I will not venture to say anything about it; but have some knowledge of the Lime Spreaders "that are puffed and blowed about as superior labor saving machines, and awarded premiums by committees who never saw them perform." This assertion, I beg leave with candor and respect to say, is with but a single exception, not correct. As far as I am concerned, in every instance save the one alluded to, I have been at the expense of furnishing lime to try my machines in the presence of committees.

As to our neighbor being induced to purchase one of those machines from seeing such "puffs and blows," published in agricultural papers let us enquire: his place is not over four miles from the shops where those machines are built, and he was a frequent visitor at the shop where he purchased the machine, making every inquiry relative to their performance, and was referred to his numerous neighbors who had machines, and tried them successfully, and gave certificates of satisfaction to the maker and inventor, last spring.

The correspondent got his machine in an unusually wet season, and lime was generally like mortar.

But suppose the weather had been dry and the lime in fine order, would it have been any better in that case? I doubt not, some men never can be suited, or if they are, they either don't know it, or will not acknowledge it. I think this is the case with our neighbor. I think he never had anything done right, or made to please him, even to a wheelbarrow.

I was cautioned before selling him a machine, that it would do me more harm than good, and told that neither I ner anybody else could please him. I confess I never sold a machine with as much reluctance in my life, believing I had been properly cautioned. I can at any time produce certificates from at least fifty of your correspondent's neighbors, that will testify their satisfaction in the operations of the same Lime Spreaders that he complains of; beside, I can produce numerous letters from gentlemen at a distance whom I never saw, giving, in glowing colors, their satisfaction of the operation of my machines.

Perhaps the following will be sufficient for the present, and although not written with the view of being published, I will take, however, the responsibility of satisfying the writer, if anything should be unpleasant to him in seeing his letter and name in print. LEWIS COOPER.

Christiana, Lan. Co,, March 10th, 1855.

Petersville, Md., Feb. 28th, 1855.

Dear Sir:—The only apology I have to make to you for not writing sooner, is, that I have been up to my eyes in lime for the last 12 months. The people in this neighborhood say I have the lime mania. I am only sorry your inventive genius had not been at work 20 years ago, and I had taken the lime mania at that time. In that case, my estate at this time would have been worth four times as much as it is now. I have hauled four miles, 4250 bushels of quick lime within the last 12 months, and expect to haul and put on 5000 bushels this year. I am in my 59th year; most of the lime I spread myself. I shall never stop until I lime the last foot of land I own. I put from 25 to 30 bushels to the acre. If I live, I shall build a monument to perpetuate the memory of Lewis Cooper, for inventing a machine to spread lime, and Thomas I. Marlow, for having the industry to use it, and I shall only lay the foundation 9 inches deep, so that those that come after us, will see what useful men we were. I can spread with a yoke of oxen about five acres a day, and with horses, 7 acres. The guano spreader does very well. I spread last fall, six tons of guano and four and a half tons of plaster, at the rate of eight acres a day. It diffuses very well indeed, I would not be without it. I purpose sowing all my plaster with it. I think the advantage of properly diffusing the quantity I use yearly, will pay for a machine in one season.

Yours with respect, THOMAS I. MARLON.

Allen's Mower.

We have on file a communication from Peter Dampman, vindicating Allen's mower as made by Lee Pierce & Thompson, against the charges of Mr Wood, but owing to the late period to was received we are compelled to postpone it.

Soil Analysis.

TO THE EDITOR OF THE FARM JOURNAL:—In the last number of your Journal, I noticed the publication of a letter to Mr. Holcomb, with reference to the annexed communication that appeared recently in the Delaware Gazette.

I fear that *this* version of my letter will give offence to both Prof. Henry and other gentlemen, unless the whole of my letter is published; and as it is strictly agricultural in its character, I hope you will not refuse it a place in your columns. And allow me to add that both Delaware and Virginia are embraced in the Maryland Agricultural Society; therefore, being advised that the agricultural departments of colleges in both Maryland and Virginia would offer formulæ, I hoped that some of the alumni or faculty of the college of my native state would aid in restoring soil analysis to the Farmer—believing as I do, that the farmer should have every encouragement to *self* dependence in this respect, as he has in every other, and (if you will allow a play upon words,) as pharmacy was the mother of general chemistry, so farmers may prove the parents of agricultural chemistry.

We talk about the *science* of Agricultural Chemistry, but where is the sage who can, like the veteran apothecary, Bouillon La Grange, point his pupils to the example of Glauber, Kunkel. Charas, Lemerie, Rouelle, Macquer, Cadet, Baume, Lavoisier, Priestley, Berthollet, Guyton, Fourcroy, Chaptal, Pelletier, Vauquelin, Proust and a host of others. It is gravely asserted in a late number of the Highland (Scottish) Journal of Agri., that one year is required to perform the perfect analysis of twelve samples of soil; therefore soil analysis must be pronounced forever beyond the reach of the farmer for all practical purposes, as the expense is beyond his means:—I may make the same remark with regard to a perfect diagnosis of any disease, however simple, and say that it would require one month of my time to use all the modern means of determining what the disease is, and that it is better to make a perfect examination where life is concerned, or to avoid medicine altogether.

Prof. Henry acted wisely, *at the time referred to.* He was more fully aware, than I, of the discredit into which *all* the old systems of soil analysis had fallen; but, anticipating the discredit of all quantitative soil analysis, I requested my formula to be deposited in the Smithsonian Institute, for a few years. Mr. Booth's unanswerable denunciation of ultimate, or perfect soil analysis may have introduced the approximative, or qualitative mode by normal solutions into Dr. Higgin's laboratory, but it was before that time repudiated by his assistant, and the attempt at quantitative analysis preferred: as may be seen by referring to his reports of 1853, as contrasted with 1854.

Since that time, the use of normal solutions, instead of weights, has become popular in Europe, and now we may expect that it will be viewed with favor by some learned men in the United States—particularly, as the merest tyro in chemistry can now detect the presence of 25 pounds of Phosphoric acid in an acre of soil, in a few hours—and one fact, with regard to one hundred soils, is of infinitely more value, than one thousand facts with regard to one soil.

After many years experience in teaching alumni from most of the colleges and universities in the United States, I may be allowed to express the opinion that, although farmers may spend three days of each week in attending instructions on Geology and *general* Chemistry, yet, without abridging these, either in point of time or importance, a few hours of each week should be awarded to the most successful student, in another department, *applied* Chemistry, to which, there should be no other door but merit, and in which, there should be no claim for instruction, but success. DAVID STEWART, M. D., Baltimore, Feb. 22d, 1855.

The following is the letter published in the Delaware Gazette, referred to in the above.—Ed.

TO C. P. JOHNSON:—My attention has been called to the publication of a letter of mine in your issue of Friday, 17th ultimo, and I must beg you to allow me the privilege of explaining what I mean by certain opinions therein briefly expressed, with which my good friend, Mr. Kennedy, is better acquainted than those of your readers with whom I have not had the pleasure of personal intercourse.

First—With regard to the general application of chemistry to agriculture, I have long since formed the opinion that the matter was still in embryo; and that the attempts to teach agricultural chemistry were generally attended with more harm than benefit. On several occasions I have been applied to by colleges and associations of intelligent agriculturists, in different parts of the United States, to name a reliable teacher in this department; and, when I have expressed the difficulty, as above, it has generally occasioned surprise that one who has spent nearly a quarter of a century in the application of Chemistry—and especially to analysis—should be so sceptical in relation to its application to Agriculture. I could state many reasons for these opinions, and must acknowledge that they appear to conflict with my letter, above referred to, in the encouragement of soil analysis.

The late Geologist of Delaware, Mr. Booth, has adopted these sentiments and expressed them publicly; but he had gone too far, by deferring the matter until a more convenient season, which can never arrive. Believing, as I do, that what is certainly known on this subject is of immense value to the farmers, and that this "budding science" is destined to blossom and bear fruit, I have been for years attempting to cultivate it, and prepare the ground for its reception; but, as I remarked in my letter, the next generation of Delaware farmers may be the soil on which it will unfold its treasures. What we most want is reliable statistics, carefully made up in all parts of our extensive country. In order to facilitate this—in one of the departments referred to—in the year 1850, I corresponded with Prof. Henry, of the Smithsonian Institute, and endeavored to induce that Institute to offer a premium for the best formula for soil analysis. At the same time, I placed in the Smithsonian Institute my formula, refusing under any circumstances, to receive any compensation or premium, should one be offered, especially as it was my suggestion. I endeavored to show the importance of statistics in soil analysis, and that the first step to uniformity should be a national formula—revised every year, perhaps, but still having a tendency to promote uniformity of practice, upon the same principle that we have a national Pharmacopœia and formula, that are quoted over the whole world as the United States' Formula. No one will for a moment admit that there ever was, or could be, a deviation in the combining proportions of Chlorine and Mercury, in the formation of Calomel; yet every one will acknowledge that Howard's Calomel is stronger than that made by the U. S. formula; and, by the way, it was the decennial revision of the U. S. Pharmacopœia, in Washington, that suggested the above idea to me, being Chairman of the Maryland delegation in the National Convention, and appointed on the committee of revision.

Now the very best evidence of the truth of my opinions about the *science* of agricultural chemistry, is the answer of Prof. Henry, that it would be impossible to get any three chemists to unite in preferring any formula for soil analysis.

My formula was deposited in the Smithsonian Institute in 1850; in the constant use of it during the ensuing two years, I made several improvements; and in the winter of 1852, I demonstrated it to a number of intelligent gentlemen in my

office, among others, to the principal of the collegiate department of the University of Maryland. In the spring of 1853, Dr. Higgins, the agricultural Chemist of Maryland, requested me to write it out for his report to the Legislature of that year, and it was published in that report, verbatim with the manuscript copy now in my possession, with the remark that it was the best formula for qualitative (the quantitative is *not* mine) analysis, with which he was acquainted. Since its publication, I have made the most important improvements that have ever occurred to me in regard to this formula; and now, that a premium of $100 is offered for the best essay and formula, in this relation, by the Maryland State Agricultural Society, and I am appointed Chairman of the Committee with Dr. Higgins, I am anxious to see some improvements made on these formula by others, especially by the agricultural department of Delaware College; in my relation to the matter, I cannot participate in the contest. The premium is to be awarded in May next.

If there is a state in the Union where agriculture is of paramount importance, and rural economy should be the distinguishing characteristic—that State is Delaware; and truth, in this relation, should be the hidden treasure for which her sons should search. DAVID STEWART, M. D.,

Chemist of Maryland State Agricultural Soc'y.

BALTIMORE, Nov., 1854.

President of the Pennsylvania State Agricultural Society.

The American Farmer thus notices the election of MR. GOWEN to the Presidency of the Pennsylvania State Agricultural Society:—"Judge WATTS having declined a re-election to the Presidency, JAMES GOWEN, Esq., the distinguished farmer of Mount Airy, was chosen in his place; and we congratulate the Society on the honor done itself, in conferring the Presidency upon this veteran in the cause of agricultural improvement. Few men now living have labored more assiduously and effectually than Mr. G., in arousing that spirit which is so rife throughout the land, for the developement of the agricultural resources of our country. As far back as we can remember, since our connexion with this press, now for more than twenty years, has his name been familiar to us, in this connexion—and our pages, as well as those of many other agricultural journals of the United States, bear witness to his indefatigable efforts for the exaltation of the character of the farmer, and the improvement of his condition."

T. P. Remington's Improved Stock.

We recently paid a visit to the farm of Thomas P. Remington of Philadelphia, situated on the Lancaster Turnpike, about six miles from Market st., and were agreably surprised to find so large a number of high bred animals, consisting of Durhams and Alderneys, together about fifty-three head. Owing to their owner having made no effort to make his herd extensively known, the public generally are not aware that this large collection comprises some of the best blood now in the country, no pains or expense having been spared to obtain them from the very best sources, both here and in England.

The splendid Bull 1st Lord Barrington, which took the first premium at the late Pa. State Fair, now owned by Dennis Kelly, was bred by T. P. Remington; he still owns his dam, Lady Barrington 4th; who, although thin in flesh, attracted our attention, by her fine proportions, and evident marks of high breeding; she is a good milker, and has given thirty quarts of milk per day. We noticed particularly among the Short-horns, for their fine tapering muzzles, delicate head and horns, and other indications of high blood, *Pocahontas*, roan; *Sophia*, red; *Milk-Maid*, who gives twenty-six quarts per day; Adriana white, a very fine cow, and *Donna Maria*, now in calf the second time, which gave twenty quarts per day with her first calf; *Perfection*, red, has the frame for a very large animal, is very broad behind, and over the hips and back, and in other respects is a true Durham. Imported *Rowena*, roan, is the mother of young bull, Richard Booth, now about fifteen months old; he is certainly a very superior young bull, of very fine quality. In his head, neck, eye, muzzle and horns, he reminded us of C. J. Wolbert's celebrated Bull, Colostra, that was never surpassed, so far as we know, in these points. Rowena was bred by Hon. H. N. Hill of Barrington, and got by Sir Walter 2nd, E. H. B., 10834.

Young Richard Booth was sired by Mr. Richard Booth's celebrated "Monk."

T. P. Remington has at present three Durham bulls in his herd, viz., 2nd Lord Barrington, two and a half years old, that took a special premium at the late Pa. State Fair, Richard Booth, and a younger one, "Yorkeshireman," about a year old; also two Alderney bulls, one of them, Patrick 3rd, as stylish an Alderney bull as we have ever seen. The Alderney cows are, several of them, very fine.

At our special request, and in answer to enquiries from us, T. P. Remington addressed us the following letter, giving the pedigree of his Bulls, and has also kindly added the other remarks about his herd. His opinions as to the great merits of the Alderneys for milking, are confirmed by nearly all who have tried them.

To the Editor of the Farm Journal:—I owe you an apology for not having sooner replied to your solicitations for pedigrees of my cattle. As regards the 1st Lord Barrington, bred by me, referred to by your note of yesterday, and now the property of Dennis Kelly, Esq., he was calved January 18th, 1852. Color red and white; dam, Lady Barrington 4th, by Bates' Bull "Meteor." Sire, Fortune, by Bates' Bull "Symmetry"; gr. dam Lady Barrington 3rd, by Dutchess Bull Cleveland Lad, No. 3407, E, H. B.; gr. g. dam, Lady Barrington 2nd., by Dutchess Bull Belvidere, 1706, E. H. B.; gr. gr. g. dam, Lady Barrington 2nd., by a son of Mr. Mason's Herdsman, 304, E. H. B.; gr. gr. gr. g. dam, Young Alicia, by Wonderful, 700, E. H. B.; gr. gr. gr. gr. g. dam, Old Alicia, by Alfred; gr. gr. gr. gr. gr. g. dam. by Young Favorite, son of Favorite, E. H. B., &c.

"Meteor" was by imported Duke of Wellington, bred by the late Thomas Bates, Esq., of Kirkleavington, England, got by Dutchess Bull, Shorttail, 2621, E. H. B; dam, Oxford, having obtained the first prize, for the best short horned cow, open to all England, in July, 1839, Royal Agricultural Society's Exhibition. The dam of "Meteor," was imported Dutchess, also bred by the late Thomas Bates, Esq.

"Ruby," the dam of Fortune, was awarded the first prize in 1850, by the New York State Agricultural Society, in class of Milk Cows, being a thorough bred improved short horn. She gave in eighty days on grass feed only, over two tons of milk, and made from June 10th to the 20th, and from August 10th to the 20th, over forty pounds of butter. The dam of Ruby was Willy 2nd, see American H. B. 104.

My young Bull, 2nd Lord Barrington, was bred by Lewis G. Morris, and Noel J. Becar, Esqs.; was calved October 24th, 1852; color, red and white; got by imported Bull Billy Pitt, E. H. B. 9967; dam, Lady Barrington the 12th, by Earl Ducie's Dutchess Bull, 4th Duke of York, E. H. B. 10167; gr. dam, Lady Barrington 8th, by 2nd Duke of Oxford, E. H. B. 9046; gr. g. dam, Lady Barrington 5th, by 4th Duke of Northumberland, E. H. B. 3649; gr. gr. g. dam, Lady Barrington 3rd, as above, E. H. B. 3407.

Lady Barrington 8th, grand dam of 2nd Lord Barrington,

was sold at public auction in fall of 1853, for two hundred guineas, and the 4th Duke of York, for five hundred guineas, at the great sale of the late Earl Dueie's stock.

"Billy Pitt" was got by the celebrated Bates' Bull, 2nd Duke of Oxford, 9046, E. H. B.; also sire of Dutchess Bull, 4th Duke of York; dam, Blossom, by Dutchess Bull Belvidere, 1706, E. H. B. The 2nd Duke of Oxford was got by the famous Dutchess Bull, "Duke of Northumberland," E. H. B. 1940; perhaps the finest Bull ever bred in England.

My young Bull Richard Booth, got by Mr. Richard Booth's celebrated "Monk," now about one year old; dam, imported Rowena, bred by Hon. H. N. Hill, of Barrington, got by Sir Walter 2nd, E. H. B. 10834, has been pronounced by good judges, a very superior animal.

I have twenty-nine head of female short horns, generally deep in the Bates' blood.

My stock of Alderneys at this time, consists of nineteen females and two male animals, mostly reserved from a large number, bred by myself, and embodying strains of blood, derived from selections made by Colonel Le Couteur, President of the Royal Agricultural Society at Jersey, importations of Roswell L. Colt, Esq., of Patterson, N. J., and from herds of the late Nicholas Biddle and Philip Physic, Esqs.

I may remark, that after five or six years experience, I am extremely partial to the pure bred Alderney cattle, for dairy purposes. I have found them to be extremely hardy, never having had a single case of sickness among them; they thrive well upon a limited quantity of coarse food, but with the same amount and quality of it as is usually given to short horns, are easily bred to large size.

Philadelphia, 1855. THOMAS P. REMINGTON.

We hope at another time, to be able to give some account of this splendid farm, buildings, and extensive lawn of, we should suppose, nearly 100 acres, planted with the choicest assortment of ornamental trees and shrubbery. The proprietor was absent at our visit, but we were told the farm comprises over 450 acres, extending nearly a mile along the turnpike, on which we observed an osage orange hedge, some four years planted, and within the enclosure, a double row of elms, twenty-five feet apart, extending the whole distance.

The land appeared to us of good quality, and in fine order, and the style, completeness and expense of the different buildings, dwelling houses, stone spring house of hewn stone, paved, ceiled and plastered, carriage house, barn, stabling, farm house, certainly not exceeded by any thing we have yet seen in this country. The arrangement of the farm house, with its milk cellar, ice house and seed room, all under one roof with piazza extending all around it, struck us as highly convenient and complete, and we should be pleased to have the plan to throw before our readers, believing it would be extensively imitated. A separate stairway for the farm hands to their lodging rooms, is so arranged as to be outside of, and unconnected with any of the other rooms.

We saw a steaming apparatus in full operation at the barn, used for steaming hay, straw, and roots for the stock.

The ornamental trees already planted out and in rows for that purpose, consisted of large numbers of our most valuable trees and shrubs, among which we observed over 100 fine Irish Yews at least four feet high, and the best lot of that number we have ever yet seen together; also English Yews, Irish Junipers, JuniperusExcelsa, Deodar and Lebanon Cedars, Pinus Austriaca and Pinaster, Picea Pinsapo, Pinus Excelsa of fine size, andPicea Cephalonica. A large lot had just arrived from Europe, comprising all the *new* and *rare* evergreens, capable of standing our climate. We doubt if there are in this country, many private collections of rare trees and shrubs in open culture, to equal this one.

The above hasty notes we made without the knowledge or consent of the proprietor, but we hope he will excuse the liberty we have taken, as we consider the matter of public interest and for the public benefit. No one who goes to the expense he has done, to perfect and complete as far as possible, not only all the general, but even most minute details of high practical farming, but also every ornamental addition which can make country life beautiful and attractive, can expect it to escape unnoticed. Our friends in New York and New England know how to show off what they have done in these respects. In the neighborhood of Philadelphia, we have farms and country seats not the least inferior, and we hope in future numbers of the Journal, to follow with other notices of some of them.

What is "Thorough-Bred" and "Full-Blood."

We copy the following from the Ohio Farmer, and agree with the writer that the term full blood is very properly, and should be applied *only* to such animals as are capable in a large majority of cases of transmitting their own characteristics to their progeny. This point is recognized here and in England to be when five crosses have been obtained or 31-32 portions of pure blood. The first cross say of a common cow, from a pure bred animal being a half blood, the second 3-4, the third 7-8, the fourth 15-16, and the fifth 31-32.

We think however, that the terms *thorough-bred* and *full blood*, should be considered synonymous terms. If a distinction is made, it is one without a *difference*. According to the argument of the writer, no animal can be *"thorough-bred,"* except the original one from whom the improvement was started and who may be considered the type of the breed, every animal since having more or less of crosses. A number of other articles on this subject from distinguished breeders have appeared in the same paper, but we have seen nothing to change our views.

"I had not thought of troubling you again on the subject of *thorough bred* and *full blood* animals; but it seems some of your correspondents have erroneous ideas, not only of the meaning of the word *thorough* and *full*, but also of the terms *Thorough-bred* and *Full-blood*, as applied to breeding. According to *my* dictionary which is Webster's unabridged, *thorough* means, *"passing through or to the end;"* hence complete, perfect; and is derived through the Saxon and Gallic from the Danish word *"door, a passage;"* while the word *full*, (same authority) means *"replete, abounding with, having a large quantity or abundance;* as a house full of furniture." These definitions are further extended and amplified, but those given are the primary and literal meaning of the words. Nor do I think of a single example in which the words have a similarity of import, or in which the one can be substituted for the other without changing the sense. By way of illustration, we say of a sheep, he is in *full fleece*, when he has over one year's growth of wool; but we could not say he was in *thorough fleece*, unless he had never been shorn, or had on him his entire fleece since his birth.

Breeders, in order to give meaning to the technical terms *thorough-bred* and *full-blood*, call all animals *full-blood* who are capable, in a large majority of cases, of transmitting their own characteristics to their stock, but who still have a trace of common blood in their pedigrees. It has been ascertained, and is generally admitted in England, and in this country, by breeders that an animal of five

crosses, on 31-32 pure blood, transmits in almost every instance the characteristics of the breed. By still further crossing, the quantity of impure blood may be still further diminished, until it is almost entirely bred out yet there will be still a trace of the impure blood sufficient to prevent the animal ever being considered a "*thorough-bred*," or one whose pedigree "passes through to the end," pure and unmixed. This meaning of the word *full* is not arbitrary but literal, "abounding with."

In my former article I held that, "No number of pure crosses can constitute a *thorough-bred;* a proposition, I think, that will meet the approbation of all breeders.

The *American Turf Register*, to which I referred, is acknowledged authority, by all breeders *for the Turf* in this country, and the particular articles referred to, has reference to English judicial decisions on the subject, not to any arbitrary rule. The amount of pure blood specified in my definition, was not intended as an absolute established rule, but only expresses the amount in the judgement of many eminent breeders, necessary to beget in their offspring, in most part the peculiarities of the parent.

Because an animal's pedigree has found its way into the Herd Book, it does not follow that such animal is *thorough-bred*, unless the pedigree itself shows there is no foreign cross; nor does it follow that every animal may posses a pure and undoubted pedigree, and his owner could easily have it recorded if he so desired. But the Herd Book is a place of general reference, in which we trace the different strains of blood, and ascertain its purity. In England, since its establishment, all, or most of the thorough-breds are there recorded, lest their pedigrees might become lost or obscured, and the value of the animal thereby affected. For although a *full-blood* may transmit, in the majority of cases, there is still some tendency to go back to the impure cross: while in a thorough-bred the tendency is reversed, and such only can be used with certainty. The bull *Perfection* may be a thorough-bred animal, doubtless is, but how much more satisfactory and reliable to the breeder, had his ancestry been handed down pure and undoubted through the Herd Book. No person, without the pedigree, can judge with certainty of the power of any animal to transmit; for it is beyond doubt, a fact, that half bred animals have been produced rivalling in form and beauty the most perfect *thorough*-bred, but entirely without the power of transmitting his excellencies to his progeny.

I am not a breeder of any kind of cattle, *thorough-bred* or *full-blood*, and my object only is to point out what I conceive to be the true and just meaning of these terms as applied to breeding generally. They are already in use, and even did not the words themselves warrant their adoption, it would be easier to conform to established custom than to adopt new terms, perhaps equally objectionable."

East Plainfield, O., 1855. JOHN HUMRICKHOUSE.

Cold Graperies.

We have received a letter, from our friend B. F. Bartolet, of Pughtown, Chester Co., who informs us he caught the cold grapery fever at the late Pa. State Fair; he went to work immediately on getting home, and has erected a house, twelve by fourteen and a half feet, three feet high in front, and eight feet at back; covered with seven by nine glass, with shutters in front and back for ventilation, the frame beviled on both sides and filled out with saw dust. The cost of this house is not more than $3, per running foot.

He has "engaged three Black Hamburgs, one White Muscat of Alexandria, one Royal Muscadine, and has room for more;" he asks our opinion which is the best; to this we reply, we would not be without one white, and one grizzly Frontignan, and one Black Prince. For further information how to proceed, which he requests through the Farm Journal, we copy an article on another page, on the preparation of the border, from J. F. Allen's treatise on the culture of the grape, with the remark, that it is now a disputed question with growers, about the expediency of using carcases, and other strong animal manure in the borders. Our opinion is decidedly in favor of doing so, and as the *right* preparation of the border is one of the main secrets to success, *we* would not think of planting a single vine, without first obtaining a carcass or two and burying them at the proper depth. The fastidious may pretend it hurts the flavor of the grapes, and say the *idea* is revolting. In the chemistry of nature, raw materials the most disgusting, are resolved into the most delicate and luscious combinations for the taste and sight; and those who are disposed to *faint* at the thought of their fruit and vegetables being grown on *manured* ground, will have to be satisfied with short pickings; at least, this is our opinion, and would be, even if Prince Albert thought differently; we have read both sides of the question.

We shall continue in another number, other extracts on the management of a cold grapery, pruning, diseases, &c. The subject is attracting considerable attention, and many cold graperies are being erected. Could our friend give us the exact cost and description of his, including his own labor, boarding of hands, &c.? Three dollars per running foot seems a very low figure.

A cold house can also be used to much advantage in forwarding early vegetables. The distance apart for the vines to be planted, will depend somewhat on the width of the border. If the latter is twenty feet wide, they will bear closer planting than if only twelve feet; if the design is to raise *extra* sized bunches and grapes, plant four feet apart instead of three.

Durability of Timber.

The Prairie Farmer contains the report of a discussion which took place at a recent meeting of the Illinois Agricultural Society, on the durability of timber, from which we make the following extract:

"Mr. Ellsworth stated that fourteen years since, he made a post and board fence of oak; a part of the posts were set with the top end in the earth; these are still sound, while the remainder have all been replaced. There was no difference in the quality of the timber, and a fact that a part was set with the top down was purely accidental. Now, when he wishes to build a fence, he waits till his posts are well seasoned, and is always careful to set with the tops down.

We should here observe that it is a well established fact which every farmer should remember, that posts when set in the ground in the manner recommended by Mr. E., invariably last much longer than when set in the usual manner. The only reason why the butt end of a post is usually placed in the ground, is because it is generally the largest. A little care in splitting, and a trifling waste of timber, would obviate that difficulty."

The superior durability of seasoned over unseasoned posts is so well established and so generally known, as to scarcely bear a repetition, were it not for the fact that every spring in almost every neighborhood witnesses the planting of green or but partly seasoned posts.

The most durable kinds of timber to be had in this part of the country, are red cedar, locust, black walnut and mulberry. We have seen posts of each of these kinds which had been planted for more than thirty years, present but little evidence of decay; and we have seen others of the last named three varieties, rotten in less than ten years.

In the former case they were said to have been seasoned before planting, and in the latter they were planted before seasoning.

Preparation of the Border for Cold Graperies.

The border should be twenty feet wide, for each set of vines,—if thirty feet, the better,—and two and a half or three feet deep; If you have but little room, you can manage to grow very fair grapes with twelve feet of border; but, in this case, you must not plant the vines so close together.

The following course is recommended in preparing the border:—If the soil is a good loam, begin at one end and trench it; mark off ten feet the entire width; throw out the soil two feet deep; if bones, or the carcasses of animals can be had, cover the bottom well with them; if these are not readily procured, slaughter-house manure may be substituted; mark off ten feet more of the border, and cover this manure with part of the soil from it; upon this, put an inch or two of oyster shells, or old lime rubbish, mixed with broken bricks; over this, put some soil from the border; then a good covering of cow manure; upon this, a slight covering of loam again, followed with a good portion of oyster shells, or the substitute; and over this, a thick covering of stable manure, well rotted; finish with a covering of the loam. The whole length is to be made in this manner, in alternate spaces of ten feet each trenching. After it is finished, the border should be three feet six inches deep; it will settle to less than three feet in a few months; any soil left, after it is finished, can be carried off.

The proportions recommended for this border, are one-half loam, one-fourth bones, or other strong manure, one-eighth oyster shells, or lime and brick rubbish, and one-eighth rotten manure.

Before planting the vines, the border should be spaded over, to mix well the top substances, being careful not to disturb the strong manures at bottom, as these substances, when decomposing, would destroy any of the roots of the vine with which they came in contact.

Should the soil be poor, decrease the proportion used in preparing the border, and, in the same ratio, increase the manures, or substitute the top soil of a loamy pasture.

If the soil is very poor, or unsuitable for the purpose, so as to require to be removed entirely, then a compost, prepared thus, is recommended;—one half to be the top soil of an old pasture; one quarter to be bones, or some other strong manure; one-eighth oyster shells, or lime and brick rubbish; one-eighth rotten manure; these articles thrown together in a heap, and so remain until decomposed and amalgamated, when they should be placed in the border, and thrown loosely together. My borders, having the most slaughter-house manure, or whole bones of animals in their composition, still continue, as they ever have done, to produce the best fruit and the largest crops.

It is unnecessary to attempt to give rules for every kind of soil. One must use his own judgment, and make his border to consist, as near as can be, of the above ingredients. He must bear in mind that, if his soil is a stiff, clayey loam, he must add freely of such materials as will lighten and give permeability to it. If the soil is light, sandy, or gravelly, with the manure should be added a proportion of clay or of clayey loam. The rich alluvian soil, abounding in our western and south-western States, will not require any of these strong manures. If any thing is requisite to improve them, it must be shells, charcoal, leaves, small stones, or gravel,—such materials as will loosen the soil.

If a compost is to be prepared, as is usually recommended by European writers on the cultivation of the grape, by taking the top soil of an old pasture, &c., and throwing them into a heap until decomposed, two or three years are required before the border is in readiness for the vines; whereas, by the plan which I have adopted, the vines may be planted immediately, making due allowance in the placing of the vine for its settling, which will be in proportion to the freshness of the manures, or the carcasses of animals that enter its compost, which, in dissolving, diminish greatly, and this in ratio to the flesh upon them; the large bones will change but little for many years. What is wanted in a grape border, is a rich, permeable soil, enduring in its nature, in which the roots can ramble and spread freely. Too much water will injure the fruit; a deficiency of moisture will prevent its swelling off properly.

Turnips as Feed.

While in attendance at the late National Poultry Show at Barnum's Museum, we spent a few minutes in the "Lecture Room." Our friend Mr. Solon Robinson was making remarks upon the use of turnips as feed, as reported in some of the journals of the day. He took the position that they were good for nothing as nutriment, and sustained himself by giving its analysis. This is all very well, but unfortunately it is not in accordance with well-known facts. We used to talk in the same way, but were obliged to yield not simply to a few doubtful experiments, but to years of experience. This the speaker seemed to feel, for he admitted that "in England it might not be so:" But we suppose a turnip in England is very much the same thing as a turnip in New York. He also added that they should be fed by turning the cattle in upon them, as they are growing in the field. We can not see the force or propriety of this distinction. Is it not the same worthless thing before it is pulled as afterwards? *Must* the cattle or sheep pull it, or bite it off, to render it nutritious? But even here there is no escape, for the English practice is, after the animal has bitten off as much as is practicable, the root remaining in the ground is then lifted by a fork and left on the top of the ground, for the cattle to eat at pleasure.

We are compelled to admit that there is something in this *fact* of nutrition, that no *doctrine* of chemistry or physiology is able to explain. The fact is unquestionable, that turnips are excellent for fattening sheep and cattle, whether we can explain why it is so or not. It is equally true, as Mr. R. stated in the same speech, that about 97 per cent of the flat turnip, as shown by chemical analysis, consists of water. These two facts, so apparently contradictory, are entirely above and beyond contradiction. We subjoin the following, on this subject, which appears in the *Northern Farmer*.

"The vegetable I wish to recommend as the best, all things considered, for milch-cows in winter, is white flat turnips. Some, perhaps, will object to the turnip, because it will affect the taste of the milk and butter. So it does, if fed raw; this can be avoided by boiling. For each cow, boil a half a bushel of turnips soft; while hot, add five or six quarts of shorts; which will swell, and you will get the full worth of it. A mess like this fed to a cow once a day, will produce more milk of a good quality, than any other feed at the same cost. Turnips fed in this way do not taint either milk or butter. One thing in favor of turnips as feed for cows, is, that they can be sown in August, or as late as the first of September. I sowed some as late as September, last year, which were very fine. Turnips are also very profitable feed for pigs, when boiled in the same way as for cows—*Plow, Loom and Anvil.*

POSTPONED:—A number of articles intended for this number have been unavoidably postponed to our next. Our correspondents must have patience with us.

PENNSYLVANIA FARM JOURNAL.

VOLUME 5. PHILADELPHIA, MAY, 1855. NUMBER 5

Sowing Corn Fodder---Drilling---Deep Plowing.

"It is an ill wind that blows no one any good," though a trite proverb is often verified in the experience of the *farmer*. We believe it will be found true, as regards the effects of the late very severe winter on our mowing and pasture fields, the alternations of which from mild to extreme cold, together with the small amount of snow fallen, acting as a protective covering to the ground, have apparently killed out the grass, especially in fields recently seeded down. Roots of both grass and wheat may be seen in many farms of eastern Pennsylvania laying on the surface of the ground, heaved up by the frost, entirely dead; and this, too, at a time when wheat is worth $2.50 per bushel, and beef and butter higher than for many years. There are two or three practical inferences suggested by these facts which we wish to call attention to. We say *facts*, because they are plain and obvious to every farmer on his own farm, and may prove, if wisely reflected upon and digested, more valuable than many pages of *reading*.

1st. *We have known, this spring*, fields of wheat apparently almost killed out, with the roots lying on the surface, the seed having been sown broadcast, adjoining other fields looking green and healthy where the seed had been *drilled*, no roots in the latter, comparatively, having been heaved up by the frost. This we consider a strong argument in favor of *drilling*, which puts the seed in *deeper*, with more *regularity* and *evenness*, the small ridges between the rows mouldering down during the winter and covering the wheat as required for protection. Here is one practical deduction of great value.

2d. It has also been found that on those fields where the ground was deeply plowed or subsoiled to the depth of eight to twelve inches, these effects of a severe winter, which will shorten the hay and pasture crop at least one-third, and in some cases probably one-half, have not been observed to the same extent as on others. This we consider a second practical deduction of great importance.

The 3d point we have to make is a *remedy* for this state of things fortunately within reach, and which will go far to make up the loss, viz: where the grass has been observed to be thus killed out, plow up the fields immediately, and sow *corn for fodder*. It has been fully proven that nothing will turn off so much acreable provender, nutricious and palatable to stock, as sown fodder. By successive sowings a supply can be kept up the whole season, and for cows, when fed green, it is fully equal to the best pasture, and will make as much and as rich milk and butter.

We have frequently urged upon our readers the importance of the corn fodder crop, and as the present is a most opportune period for the experiment, we hope they will give it a trial. There are two methods of putting in the crop, by drilling in rows and by broadcasting. We prefer the former, and would recommend, after the ground has been well plowed and thoroughly pulverized, rows should be struck out one way, two and a half or three feet apart, and the corn strewed along at the rate of about three bushels to the acre. The seed may readily be covered with a cultivator or harrow passing parallel with the rows. When the corn is about a foot high, run the cultivator along once or twice to clean out the weeds, and no farther attention will be required, as the ground will soon be covered and yield a product of ten or twelve tons to the acre, and *more*, depending on the strength of the soil.

The above is substantially the plan recommended by J. J. Thomas, and we believe to be the best. George Walker, of Susquehanna county, however, prefers the broadcasting system, and gives his method of managing it and his product in one of our back numbers. If the soil is not in good condition, it will pay well to spread three hundred pounds of guano to the acre previous to plowing. Much of the fodder crop may be got off in time to seed with wheat next fall if desired.

Home Production and Home Consumption.

Our friend Howard Williamson, of Chester county, has written us a practical and interesting letter on the above subject, which we regret not being able to insert entire. He goes for the protection of our domestic industry, and thinks if manufacturers and mechanics of all kinds—shoemakers, tailors, carpenters, spinners, weavers, &c.—were encouraged to locate among the farmers, it would create a ready home market at once for all their produce, beef, butter, eggs, flour, fruit, &c.; that this increased consumption would re-act again, making increased production, and thus the substantial wealth of all be promoted.

This has always been our view, but as the principle of protection has been made so exciting a *political* question for the last thirty years, and we wish to keep politics out of the Farm Journal, we have avoided entering upon its discussion. We think, however, our friend is in error in connecting the decreased production of wheat in New York and Ohio with the *increase* of agricultural so-

cieties. There is certainly no *fair* inference of the kind to be drawn, and the directly beneficial effects of their influence can be pointed to in the most palpable shape all over the Union. We should rather say the reduced product of wheat per acre has occurred in spite of agricultural societies or notwithstanding them.

New Jersey State Agricultural Exhibition.

We understand the Executive Committee of this Society have fixed upon Camden, opposite Philadelphia, for their State Fair next fall. Whatever the Jersey farmers take in hand they are apt to do most thoroughly, and we may accordingly look for an outpouring, not only of improved stock of different kinds, especially horses, of which some of the best specimens in the country are in New Jersey, but also those fine vegetable productions for which she is deservedly famous, melons, tomatoes, sweet potatoes, and other products of the garden; apples, peaches, pears and plums from the orchard; and a display of field crops, for which her farmers are so particular in procuring choice specimens of seed, corn, oats, wheat, potatoes, &c. It is also not generally known that *one* of, if not *the* greatest Pomologist in the world resides at Plainfield, New Jersey, a Belgian gentleman, L. E. Benchmans, from whom contributions of his immense collection may no doubt be expected at a New Jersey State Exhibition. We understand he has at this time growing twelve hundred varieties of pears, twelve hundred apples, and twenty thousand seedling pears.

The location at Camden we should suppose to be the best that could be selected on various accounts, and we have no doubt of its complete success.

Death of Thomas Hancock.

Soon after our pages had gone to the foundry for stereotyping last month, we received information of the decease of THOMAS HANCOCK, of Burlington, New Jersey. Although rather late for a notice, we may remark that agriculture and horticulture have lost in him a firm and zealous friend, whose persevering efforts for a number of years have contributed very much to advance these two great interests, and attract to them public attention. In the Pennsylvania Horticultural Society, he was one of the most active members, and will be greatly missed, being a liberal contributor himself to its exhibitions, especially in the department of fruits, to which branch he had long devoted close attention in obtaining and propagating such new varieties as were valuable and adapted to our climate. His large experience in this particular made his counsel much sought for as a member of its fruit committees.

Thomas Hancock was remarkable for his energy, enterprise and public spirit, filling many positions in his own vicinity of profit, trust and honor. He was one of the active originators of the Burlington County Agricultural Society, and latterly devoted considerable time and means to the improvement of stock. He was probably most extensively known as the proprietor of the Ashton Nurseries, near Burlington, established over thirty years ago, and containing one of the best collections of fruit and ornamental trees and shrubbery in the country.

Budded and Standard Roses.

There seems to be a very general dislike to *budded* roses, and many of our finest varieties, which by the way happen to be the most difficult of propagation by *cuttings*, are rejected because difficult to obtain on their own roots. The objection to budded roses is not without *some* reason, but we think the force of it depends very much on the kind of stock used. The common sweet briar and maiden's blush are objectionable from their great liability to sucker. We have known a fine sucker to be cultivated and trained with the greatest care, to the irreparable injury and loss of the budded plant of more feeble growth, and the mistake not discovered till the bloom appeared. Where the stock and scion, too, do not form a perfect union, the latter is also very liable to be broken off. Nearly all the objections, however, to budded roses fail when the mannetti stock is used, and if care is taken to obtain them on this variety which is now generally used for the purpose, there need be no difficulty. The mannetti first brought into notice by T. Rivers, has several very great merits. It is a very strong grower, and plants budded on it often grow much faster than on their own roots. It is extremely hardy, and never suckers. Standard roses worked high on a single stem, have not usually done well in our climate, owing to the exposure of the naked stem to our hot scorching suns. The mannetti does not seem to mind either intense cold or great heat, and its bark becomes almost as tough and rough as a tree. We have seen such fine perpetuals as Geant des Bataille, Souvenir de Malmaison, William Jesse and Mrs. Bosanquet, worked at about four feet high, on a single stem and in bloom at the same time, making a most elegant tree of roses, with perfect branches. When the climbers are thus managed they droop over and make a weeping rose tree, of any desired height, four, five or six feet, and are a most attractive object for the lawn.

To Improve our Roads.

A correspondent, who has been suffering considerably the past winter from bad roads, and thinks the present system of road mending in Chester county entirely inefficient, and the road taxes not judiciously expended, proposes a remedy as follows, which he wishes circulated through the Farm Journal:

"I propose contracts being made with young men to supply stone as it may be required; that it be broken up small at the expense of the farmers, and the roads covered to the thickness of six inches with these small stones, thereby filling up all the hollow places and ruts; (the road to be higher in the middle than the sides) the road to be then covered with a layer of dirt, six inches, to make the road firmer and better to travel upon.

"You can easily see that in a few years (three or four) what a beautiful road there can be made, which will then be dry, being impervious to water, and gradually "by these alternate layers of stone and dirt" become metamorphised into a turnpike, which, although the first outlay will be greater, can be kept in order at a much less cost than our roads of the present day, on which nothing is returned though much is expended.

A SUFFERER FROM BAD ROADS."

Trifolium Incarnatum, or Crimson Clover.

A recent number of the "Transactions of the Highland Agricultural Society of Scotland," contains a prize essay (for which a gold medal was awarded) by James Fulton, respecting this new clover. From his several trials with it during three or four years, it seems to possess some extraordinary properties, which will make it exceedingly valuable. His series of experiments commenced in 1852, and were nine in number, extending down to quite a recent period. From them he establishes the fact that the crimson clover flowers over a long period of its growth; that its rapid and luxuriant vegetation is hardly equalled by any other plant, coming forward to the scythe in ten or twelve weeks after being sown; that its product to the acre is very large, and it answers capitally to precede a crop of wheat, both by its mechanical effect on the soil, and from its alleged power of collecting nitrogen. In one of the experiments the wheat after the crimson clover, was one-third heavier than after turnips, other circumstances being similar; and it is thought it will be quite possible to grow it in England as an intermediate or stolen crop between a wheat and turnip crop, provided it can be got into the ground by the middle or before the end of August. In the first experiment, the seed was sown on the 12th of May, and on the 17th the blade began to appear above ground, and on the 23d the leaves were fully developed. On the 21st of August (same season) one square was cut from three separate parts of the field, the average weight of which (green from the scythe) gave eighteen and a half tons to the imperial acre; some of the plants measuring four feet three and a half inches in height. The flowering commenced by the end of June, when the height of the plants was eleven to thirteen inches, and it matured seeds by the 1st of September. When in full bloom the field was an object of striking beauty, presenting to the eye one unbroken sheet of scarlet. It appeared to be an especial favorite with bees; on looking at it on a fine day in July, it was difficult to fix on a single plant that had not many of them upon it.

In the third experiment, the crimson clover was sown on the 17th of July after a crop of potatoes had been taken off. It came up on the third day, and grew so rapidly as to cover the ground in an incredibly short time. The weight of the crop was taken on the 17th of October, three months after the date of sowing, and was found to weigh twenty-one and a half tons to the imperial acre.

Among other phenomena in the third experiment, was noticed its extraordinary power of resisting frost, free radiation, and a remarkably succulent condition, which may account for the surprising weight of the crop. Its radiating powers, to which its immunity from the effects of frost were probably due, were very conspicuous in dewy and frosty mornings. In the former the clover was bent down by the deposit of dew, which was much heavier than on other plants, and in the latter it was so densely covered with hoar as to appear like a fall of snow.

The above are extraordinary statements. We have made arrangements to procure some seed for trial in the United States. It is said to be an Italian species.

Alsike Clover.

As there have been numerous enquiries the present season for *alsike clover*, by many of our enterprising farmers, who wish to give a trial at least to every new article, that promises to be of any value, we have made some examination into its history, and find that it has been cultivated for many years in Sweden in the district of Alsike, whence its name, and that it is generally considered a hybrid, between the white and red clovers, therefore called "Trifolium Hybridum. It is said to throw out a great number of stems from one root, even as many as thirty. It is a perennial plant, grows very rapidly after cutting, and is said to be remarkable for standing well the hardest frosts. Dr. Emerson, in his Farmer's Encyclopedia, which by the way treats on every thing relating to agriculture, arranged in alphabetical order, says: "Alsike Clover possesses the strength and vigor of the red, with the permanency of the white clover." We hope many of our friends will give it a trial the present season and forward us the results.

It can be obtained, we understand, at the seed stores in this city at $1 per lb.

Large Oaks.

Dr. Elwyn informs us in reference to the article in last Farm Journal on large oaks, that there are two in East Bradford, Chester county, one on his own farm, and the other on the adjoining farm of Jonathan Paxson, both exceeding in size that referred to in Bartram's garden, one being over twenty-one feet, and the other over nineteen feet in circumference.

The White Blackberry.

The White Blackberry is a most vigorous grower, often attaining a height of ten feet. It is a much more prolific bearer than the common variety, or field blackberry, the buds being set on the stalks in the immediate vicinity of each other—there being generally not more than the distance of two inches between them, and each bud having *two* spurs instead of one, as in the case with the latter. The berries are of large size, amber colored, and possessing a flavor remarkably rich and sweet. There is no difficulty whatever attending its cultivation; all that is essentially requisite being a rich, light, and moderately warm soil, and a copious and sustained supply of forest leaves and scrapings. A compost formed of these, with a small quantity of gypsum, and frequent hoeings to lighten the soil and prevent the radiation and growth of weeds, will almost invariably secure success in the cultivation of this valuable fruit. The original cultivator of this fruit in this country, is Mr. J. S. Needham, of Danvers, Mass., and "Needham's White Blackberry," of which a very good engraving was published some time since in the *New England Farmer*, is probably the most prolific and valuable variety of the fruit to be found. The White Blackberry and Black Raspberry are both valuable fruits, and should have a place in every fruit and kitchen garden in the land.—*N. E. Farmer.*

Valuable Sheep.

J. S. Patterson has recently sold, in Wisconsin, a number of French merino ewes, at $200 each, and a year old buck for $1,000.

Allen's Mowing Machine.

To the Editor of the Farm Journal:—In the Farm Journal for March, a communication appeared over the signature of Thomas Wood, from which, as it appears to me, very prejudicial and unjust inferences might be drawn in reference to Allen's mower.

The judgment of a person as to the respective merits of a plow, scythe or cradle, who is entirely unaccustomed to their use, would not be considered very safe or reliable. Much more so is it the case with farm machinery, which is more or less complicated, requiring a degree of experience and practical knowledge rarely possessed by the majority of those who purchase.

I purchased an Allen mower last season, made by the firm of Lee & Co., which certainly was not finished as it should have been for the price paid for it, or for the reputation of the inventor and manufacturer. Yet, with its defects, which were confined principally to the screw bolts and shank of the knives, which I remedied in part, I would not take five hundred dollars for the machine, with the understanding that I was to return back to the scythe and snead.

My grass last season was badly lodged, and upon introducing the machine into the field as it came from the shops, like our friend's it did not perform well. It was set too low, raising the stones out from the surface of the soil into the knives, choked badly, and as a matter of course worked hard for the team. I set it higher by inserting a piece of wood in between the upper side of the tongue and the lower side of the staple, which steadies the tongue; ground the half knife at the extreme end of the bar; sharpened the rest with a common hand saw file; tightened the burrs, and was then enabled to cut wet or dry, lodged or standing, with no more draft, except in spots, than I experienced in ordinary sod plowing, and no perceptible side draft, as in operating I had to guide the horses about as much towards the grass as from it.

Imposition is practiced to a great extent in the use of rolled iron for bolts just as it comes from the mill. No manufacturer who has a true regard for his reputation as a mechanic, and as a just and honorable man to those who confide in his integrity to furnish machinery not liable to get easily out of order, should use screw bolts which require unscrewing at time, without square shanks, an inch or two in length from the head, proportionate to the depth of wood in which they are imbedded, and to the strain necessary to secure the burr in its proper position. They should also be double burred where the strain is severe, with a spring key inserted below the burrs to keep them in their proper place.

The prices paid for machines at present appear to me to be very generous, taking the value of the material of which they are composed into consideration; yet I should regard it as quite a speculation to pay an extra price for such as are thoroughly finished, having all parts made proportionate to the strain brought to bear upon them, as then they would be likely to be in order for business at all times, especially when time is most valuable, unless injured through carelessness or accidents.

I think that I obtained over three tons of hay by the use of the mower more than I should have had by using the scythe last season, besides being satisfied as to the amount of strength I could rely upon. Indeed so effective was it in its operation, although not well put together, that I had not one full swath mowed with the scythe across my fields. THOS. HOPKINS.

Montgomery co., 3d mo. 22d, 1855.

Manures.

Mr. Darlington:—We are pleased to see that the attention of farmers is so frequently called to the subject of manures through the columns of the "Farm Journal." The matter that has appeared in its pages on this subject from time to time has been important help to us in the management of our manure heaps.

There is not a farmer who subscribes for your Journal, and practices but half of what he will find on this subject alone, but who is paid ten times over the amount of his subscription. The manure heap is really the "farmer's bank," as it is often termed; and in proportion to the issues the farmer is able to make from it yearly in quality and quantity, in about like proportion will be his yearly income.

It is also very evident that as at present managed by farmers generally, there is no one way in which they are so wasteful and sustain such regular and heavy losses. It would be no difficult matter in a day's travel through some sections of this State, to point out more than a score of barnyards where manure is wasting annually, the value of which is more than equal to all the taxes the farmers are subject to.

If farmers would take the care of their manures they might do at a trifling cost, their taxes could be paid and not feel them to be such a burden as we often do. The old adage, "penny wise and pound foolish," can be said of farmers often with too much truth. One will meet continually with those who are industrious, and practice the most rigid economy in most that concerns them, yet they do not seem to dream that the rains are carrying away from their manure heap annually what is worth to them from fifty to a hundred dollars, which could be all saved at but little cost.

There have been numerous plans suggested to the farmers for improving the quality of manure, and to prevent it from wasting from the yard. One is the erection of a shed over the entire mass. This may be proper in some cases, but to it there are, we think, some very grave objections; and besides it is an expense that farmers generally will not be willing to incur. That sunshine and showers materially diminish the quality and quantity too of the manure heap in a badly constructed yard, or when little or no care is taken of the heap itself, is a fact that every farmer ought to be aware of; and this he may prevent in a good measure at much less expense than erecting sheds.

Instead of the manure yard being level or oval, as is often the case, it should be of a basin form, considerably hollowed out, so as to retain the juices, and be a receptacle also for whatever material may be thrown in to make manure. This can be done to most yards in a short time by plowing it up, and with a horse scraper running the loose ground out around the edge of the yard. But this will be of little use in preventing the manure from being leached and wasted by the rains, if the water is suffered to run from the roof of the barn

into the yard, for it would take a pit-fall deeper than any farmer would like to have before his barn to hold all the water that comes off such a roof in the course of a year. What falls from the clouds directly on the heap is sufficient to promote decomposition, and prevent too high fermentation; and in most cases this amount of moisture is necessary.

But let the water from the roof be, by all means, conveyed off. The advantage will more than cover the expense of good tin spouting in one year. As well might our wives expect to succeed in making a kettle of good soap from ashes that have been exposed to the weather, and leached by the water from the roof of some building, as for us to look for a proper return from our fields where we have spread manure that has been drenched by the water from the roof of the barn. And yet there will be no small amount of manure wasted if the yard is not properly fenced. Every yard should be enclosed with a good post and rail fence, with gates large and small for passing in and out with the team, or otherwise. This will confine the cattle and other beasts of the farm so that their excrements will not be scattered all about the premises, which, while it is wasted, is also a nuisance.

We do not hesitate to say that the farmer who will but take the pains, and incur the cost of fixing his yard as suggested in these remarks, will be amply paid in one year by the extra quantity and improved quality of manure he will be able to apply to his land.

When the manure is left in the yard until the fall of the year, as is usually the case, it often becomes so rotten that the yard is not a fit place for beasts to lie or even to stand.

To prevent this the farmers should have the whole heap well littered over with straw, or leaves from the woods, once every few weeks. This, while it gives a comfortable place for the cattle to rest, also protects the manure, which is now sufficiently decomposed to apply to the land, from the evaporating effects of sunshine and wind. J. H. ALEXANDER.

Near Lewistown, Pa.

Hen Manure.

Mr. Darlington:—If it be in season, in reply to the inquiry of Wm. Hartley, of Bedford Co., Pa., I would say, I have had some experience for several years past, in the saving and application of hen manure to various crops of the field and garden.

I have used a mixture of hen manure, plaster and ashes, with marked success in parts of my corn field, for some time past. The hen manure should be gathered monthly—weekly is better, and packed away in barrels or boxes, well mixed with some plaster or charcoal to retain the ammonia. When it is to be used, not before, mix it with some ashes, putting in each hill of corn a good handful or more, being careful to cover it with one or two inches of the soil, and I have never known it to "have an injurious effect on vegetation," but on the contrary, it gives it an early start, and if the ground is strong enough to perfect the plant in the latter part of the season, no person thus applying it need fear but that he will be well remunerated for his labor, with an abundant harvest.

You will permit me to say, sir, in this connection, that P., from Muncy, Pa., in the March No. of the Journal, in the application of "Poultry Manure," as he says, "*upon hills* or beds containing the seeds," will if followed cause many to lose a considerable part of the benefit, which they otherwise might desire from its application, if judiciously applied.

In his communication, if I do not misunderstand him, he states an important fact as a benefit, which is most certainly a damage, the loss of a part of the fertilizing portions of the manure, "*it having decomposed by losing much of its ammonia.*" By all means cover up, or work into the soil all manures which will part with any quantity of ammonia which they contain, by being exposed to the action of the atmosphere.

RICHARD BEDFORD.

Campbelsville, Sullivan co., Pa., March 19th, 1855.

For the Farm Journal.

Barns and Wintering Stock.

Mr. Editor:—J. S. K., in the March number of the Journal, speaking of the barns of Pennsylvania, thinks that they are not quite the "thing," as the feed for cattle is stored over the stables in which they are stalled. The barns of northern Pennsylvania and western New York are constructed differently, and the hay is kept at the extreme end of the barn from the cattle, and often lower than the cattle, still I have frequently seen them refuse to eat as he describes, and nearly starve themselves, when the hay could not have possibly come in contact with the volatile matter arising from their excrements and breath. I consider that it is the course of feeding, instead of the feed, that is the cause. Cattle are kept wholly upon hay without a change until it becomes unpalatable, therefore they dislike it, and will not eat but enough to sustain them. Should cattle have their feed changed as often as every other day, giving them a feed of cornstalks, straw, or some other coarse feed, it will make the hay relish well, and they will of course eat greedily. Cattle should also have salt once or twice a week in winter as well as in summer, and it will tend to give them an appetite. If there is any tendency to scours by frequent salting, mix pulverized alum with your salt, and all works well. Our lumbermen practice mixing alum with their salt for working cattle, and salt them every day, and they do well and eat well.

A. H. C.

Farmers' Valley, McKean co., Pa., March 13, '55.

[We have never known cattle scour with eating salt if they have it always ready of access, which they should have. A lump of rock salt should always be in the yard or in their troughs.—Ed.]

Rye Grass.

J. L. Darlington, Esq.:—At the conclusion of an article on rye grass, in the March number of your valuable and interesting Journal, you ask for further information about the varieties of that herb.

In England they have one variety known as "Dwarf," which appears from the botanical description you give of several varieties to be the same as the one called "L. P. humile, only six or seven inches long." It is always considered the best for grazing purposes, and I think it

preferable also for making into hay from this fact, that although much shorter than most others, it throws out a great number of shoots from the root, which makes a thicker and finer quality of hay.

I have generally found tall, single-stemmed grasses coarse, therefore less nutritious.

As Sinclair says, Pacy's is the one best suited for lawns, &c., but the dwarf is best for general agriculture, as you can either graze or mow it, which is a choice all farmers ought to have, as a change of season from wet to dry, or "vice versa," may alter their original intention with regard to the use they may make of it.

The quality of most of the rye grasses I have seen in this country is coarse and long, which I consider a great objection.

I look upon the best variety of rye grass as next in value to clover, and no pasture, whether for temporary or permanent use, is what it ought to be when it is excluded.

It is so generally used in England that you seldom see any new pasture without it.

I consider it as superior to timothy as timothy to straw. It yields more food per acre, and of a better quality; the soil is also improved by it, while it is deteriorated by timothy. Yours truly,

JNO. WM. GIBBONS.

531 Walnut St., Phila., March 26, 1855.

[Will our correspondent give us his experience or knowledge, if any, with the *Italian* rye grass, and its comparative value with the *English?*—ED.]

For the Farm Journal.

Rape.

N. L., of West Fallowfield, in last month's Farm Journal, gives his experience with some rape seed which he received from the Patent Office in the spring of 1853, according to which it got winter killed. This may be owing probably to two causes. The first is, that probably he got from the Patent Office a paper of spring colza, which, according to his statement, he planted in June, a period too late to sow spring colza or rape, as in most cases it will be winter killed, particularly if the season is severe; and secondly, unless even winter rape is sown on perfectly drained land, that also will get winter killed, and from the texture of some lands in Chester county, Penna., they retain the moisture in a much greater degree than sandy loams, which suit this crop much better than clays or clayey loams; the latter are, however, well adapted to it, provided they are well drained if too wet. In proof of which, friend N. L. has only to pay a visit to where I have the winter rape fully *growing*, after having passed through this last severe and fickle winter season; although it has been sown under great disadvantages, on *unmanured* but new land, amongst stumps of trees and bushes, which I had not time to remove, and where the harrow hardly could work. The plants are likewise *free* from insects, (probably the Jersey breezes drive them into the Atlantic!) The proof of all this is, that they are there! alive and shooting forth, and that I anticipate a crop of seed to a certainty. At one time it was doubted whether cotton could be grown in the Carolinas and Georgia, or sugar made in Louisiana. It's true this was many years ago, nevertheless the first growers of cotton and sugar cane were derided and ridiculed by their would-be further-seeing and wiser neighbors; notwithstanding which they not only did grow them and disappointed the croakers, but now they form two of the most important staples of this continent. With regard to the Englishman in Salem county abandoning it, he had probably his own reasons for it, death or other causes; however, this has nothing to do with it. I will merely add, that even for fodder it is sown with profit. *It is* sown for fodder, and particularly in England, Germany, &c.,—however, in L.'s opinion, it might be derogatory to follow the example of our cousins over the water, but why not do it in this case as it has been done with almost every other thing in husbandry. True, the climate and localities of different countries modify and alter in some measure as experience and knowledge dictate; however, let N. L. persevere with the rape, doing every thing with care, on proper soil, with suitable seed and in suitable seasons, and no doubt he will be pleased eventually with the results. F. A. N.

Fourth month, 1855.

Raising Corn.---An Interesting Inquiry.

MR. DARLINGTON:—In the March No. of your excellent periodical, I find "an inquiry continued" in relation to the subject of raising corn, or why many of the stalks of corn in some fields will begin to assume a stunted appearance about the time it puts out the fourth leaf, and why it continues to appear sickly throughout the whole season, attaining only the height of two or three feet, with striped leaves, and failing to produce any ear.

I am not an agriculturist myself, but if any information that I possess will prove beneficial to this large and worthy class of our community, I shall be highly gratified.

My father is a farmer and I was raised on a farm, and I well remember how our prospects were often blighted by the same disease or enemy referred to in the above inquiry. It always occurred with us when corn had been planted on a clover sod, and by frequent examination we discovered that the main or tap root of the corn had been injured by an insect somewhat resembling the muck worm, only of smaller size. The remedy that proved partially successful was winter ploughing, but the safest plan is to follow clover with wheat and plant corn on a wheat stubble.

For further information your inquirers are referred to

Near Lewes, Del. JOEL PRETTYMAN, Esq.

Moon-ology!

MR. DARLINGTON:—At the risk of being sneered and laughed at by those who consider themselves above "learning from the illiterate;" and who believe knowledge to be acquired *nowhere out of the schools*,—I will reply to the apparently sincere enquiry of Mr. Hugh Hamilton, in the March number of your "Journal," in relation to testing the question of lunar influence, as proposed by C., of Montgomery county, in the August number of 1852: that an extended trial be made in that year of cutting briars on the last day of the last quarter of the moon, and in the sign of the Heart or

Leo. As I made a *partial*, though not *comparative*, trial as then recommended at the time indicated, I will give the result, which, if you, Mr. Editor, consider worthy a place in the Journal, you are welcome to publish.

I had a "patch" of the blackberry briar, that had taken full possession of three contiguous worm row fence corners; frequently before I had them grubbed out, and that too in the "hottest and driest weather of August," but so far from eradicating the patch—the more the digging the more vigorous the growth in subsequent years. So on this nest of "squatters" I concluded to try if the moon would lend me its aid in destroying them. I went to work with mattock in hand at the precise time as stated by "C.," and with considerable labor and some "scratches" dug out every sprout, and as many of the roots as I conveniently could, yet many roots were left in the ground. The next year (1853) only a few sprouts made their appearance—these did not grow over two feet in height, had a sickly appearance, and died out without further attention in 1854.

Such are the simple facts, each one may draw his own conclusions, and try the experiment for his own satisfaction. It is only a single experiment, and of course requires confirmation by repeated and more extended experiments. A single grain of sand does not make a sea shore, and if others will give publicity to their experiments, and continue them, we may in time arrive at some definite conclusions. J. B. GARBER.

Mountville, April 3d, 1855.

Holcus Saccharatus.

To the Editor of the Florist:—Sir:—In the last number of the *Florist*, is an article from the *Gardeners' Chronicle*, which I am not sure that I exactly understand. It is concerning "A new Sugar Cane." We are told, "a *novelty* has this year appeared, in the form of a tall, reedy grass, called *Holcus saccharatus*, of whose economical value we find that great expectations are entertained." It is then stated that this "Chinese Sugar Cane" (as it is also called) yields *Sugar* copiously,—much more than the Beet, &c. Now, what I want to know, is the real character of this "*novelty*." If it is the *Holcus saccharatus*, of Linnæus—the *Sorghum saccharatum*, of Persoon, I do not understand why it is regarded as a "novelty." Every body, in this country, is familiar with the plant, under the name of "Broom Corn;" and it has long been cultivated (in some parts very extensively) for the purpose of making brooms, whisks, and clothes brushes. The books tell us, it has long been cultivated, in Italy, as a *substitute* for the Sugar Cane. But I strongly suspect it is inferior in value, for that object, to the *Indian Corn*, of our country. Yet, whatever its value may be, it has no claim to be styled a "novelty." If it is *not* the *Holcus saccharatus*, of Linnæus, it has no right to that old established *name;* but must be called something else. The question then recurs, *what is it?* The answer must be left to you, and the Gardeners' Chronicle; and, for me, I shall be glad to learn its true character. Those writers who treat us to such *novelties* as *new* "Wheat," made from *Ægilops*, and *new* "Sugar Cane," from *Holcus*, are very remiss, in my humble opinion, in not following up their discoveries, by conclusive demonstrations of the real facts of the cases stated, and the true character of the plants indicated. Naturalists, now-a-days, like to have some reliable *evidence* of what they are asked to believe; and clear, definite statements, concerning all alleged *novelties*. W. D.

February 14, 1855.

In connection with the Florist, and most of the American agricultural journals, we published the extract from the London Gardeners' Chronicle—usually good authority in such matters. The above article by W. D. will doubtless soon clear up the mystery, whether in the name or the substance.—Ed. Farm Journal.

Grafted Chestnut Trees.

The *Cincinnati Gazette* publishes an interesting letter from Mr. Sheldon I. Kellogg, to the Wine Growers' Association, dated Bordeaux, France, on the cultivation of the chestnut. He says:

"I have been much surprised in seeing the great dependence the poorer classes make upon the large chestnut for their daily food. It is cultivated in this neighborhood in great abundance for this purpose. All classes use them more or less; the rich having them daily brought upon their tables as dessert, either boiled or roasted. It is often made into a soup, which is highly esteemed. They are cooked in a multitude of ways, and I know of nothing of a farinaceous nature which is so very delicate and nourishing.

"The marron, or large chestnut, is the produce of the wild chestnut after being engrafted. The wild tree, at three or four years of age, is cut square off, say four or five feet from the ground. The stump is then split twice. These splits intersect at right angles at the centre of the stump. There is then inserted one good-sized branch of the same tree in every section of the splits, making four branches in each stump. Care is always taken to make the bark of the branches and the bark of the stump join each other as closely as possible. The graft is then surrounded with clay and moss, to prevent the overflow of the sap, and it scarcely ever fails of success. The period selected in this climate for this operation is the month of February. The produce of this graft is usually a fine, large, beautifully colored marron, about the size of our buckeyes. They are much more delicate in texture and flavor than our own wild chestnut. They are never eaten without being cooked. The tree is very beautiful."

Rye Grass.

"Twenty Tons of Hay per Acre.—It was stated by Mr. Cird, at an agricultural dinner given by Mr. Mechi, in England, recently, that twenty tons of hay had been raised off a single acre, in Scotland, the last season. It was Italian rye grass, which grows to a great height in the humid climate of Scotland, and he cut from seven to ten times from March to December. In the instance named, it was cut ten times, but after each cutting, an abundant application of liquid manure was made."

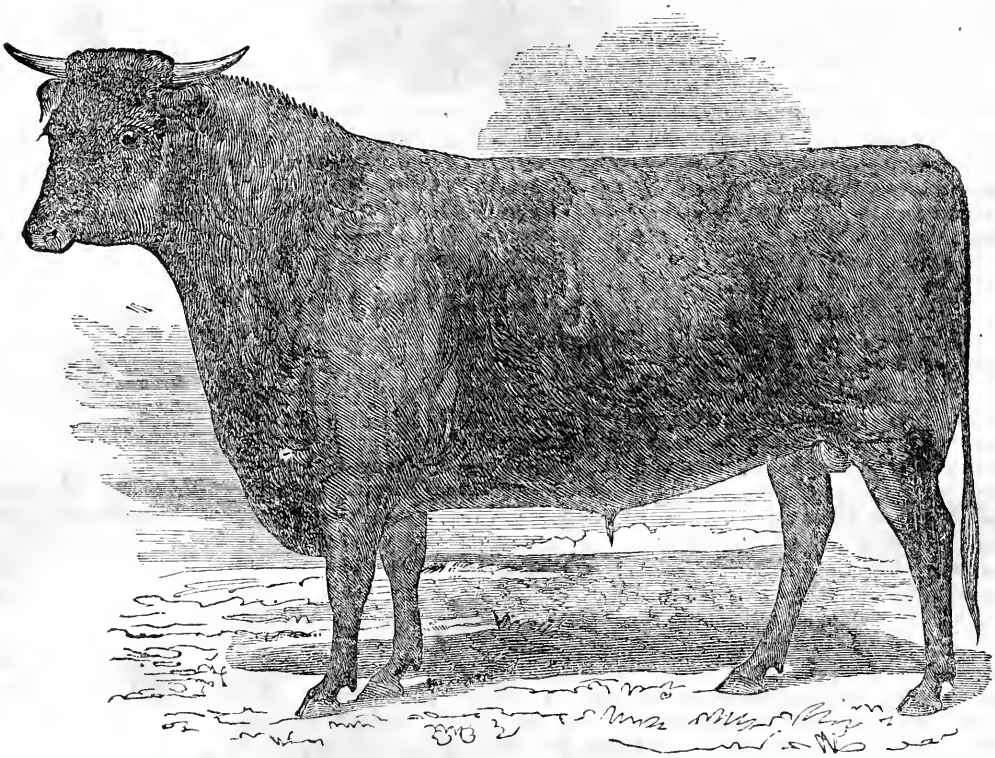
The above from an English paper, when cut down one half, which is probably nearer the truth, will still serve to give an idea of the estimate put upon Rye Grass in England, and its extraordinary productiveness. Perhaps Mr. C. meant twenty tons of grass—"uncured hay."

The White Carrot.

Col. DE COUTEUR, in some able remarks upon the productiveness of this vegetable, says that the acreable product is about thirty-eight tons. When we take into the estimate the superior excellence and value of the Belgian or White carrot for stock feeding, this will appear a very good crop, although far less than is often afforded by turnips or even beets. The carrot, in all its varieties, is a crop requiring a good soil and thorough cultivation, but probably one of the best crops the farmer can produce. Lord DUCE estimates the expense of cultivating the white carrot "at little more than half the cost of growing any other root crop known to him." The product also of the "whites" exceeds that of the "reds" from eight nine to tons per statute acre on the same soil. We have cultivated the white carrot only in small quantities, and cannot say with any degree of confidence what their comparative merits are. But the opinions of others may perhaps lead us to a higher estimate of some crops not now usually cultivated among us.—*N. E. Farmer.*

Mange in Cattle.

The disorder termed the mange arises from the excitement of the skin, probably brought on by disarrangement of the organs of digestion in consequence of poverty, engendered by hunger and want of shelter. After these are supplied, a wash made of gunpowder and water—charcoal, nitre and sulphur—will be found a valuable application. Mange is an infectious disorder; remove therefore the sick beast from the rest of the herd.—*Boston Cultivator.*



DEVON BULL "MASSASOIT."

The Property of Geo. F. Curwen, of Walnut Hill, Montgomery Co., Pa. Address West Haverford P. O., Del. Co.

"Massasoit" (247*). Calved October 3, 1853. Bred by C. S. Wainwright, of "The Meadows," Dutchess co., N. Y. Sired in England by a son of the Earl of Exeter (38), which won the first prize at the Bath and West of England Agricultural Society's Show in 1854. Dam, "Ginerva" (747), by Earl of Exeter (38); gr. d. "Betty Maid" by Proctor (109); gr. g. d. "Beauty" by Nelson (81). "Massasoit" won the first prize in class of imported yearlings at the New York State Show in 1854.

*Numbers from Davy's Devon Herd Book.

Agricultural College of the State of Michigan.

A bill has been passed by the Legislature of Michigan establishing an Agricultural School and Experimental Farm, to be located within ten miles of the Capitol—Lansing. The purchase of land is not to be less than 500, nor more than 1000 acres in one body, and to cost not more than fifteen dollars per acre. Tuition to be forever free to pupils of the State of Michigan and to be under the direction and supervision of the State Board of Education.—*Horticulturist.*

JERSEY CATTLE, IMPORTED BY DR. W. T. G. MORTON, ETHERTON FARM, WEST NEEDHAM, NORFOLK COUNTY, MASS., AUG. 1, 1854.

Entomology.

HORSE-FLIES.—The flies that abound in stables in August and September, and sometimes enter houses on the approach of rain, might be mistaken for house-flies, were it not for the severity of their bites, which are often felt through our clothing, and are generally followed by blood. Upon examination they will be found to differ essentially from house-flies in their proboscis, which is very long and slender, and projects horizontally beyond the head. Cattle suffer sorely from the piercing bites of these flies, and horses are sometimes so much tormented and enraged by them as to become entirely ungovernable in harness. The name of this kind of fly is *Stomoxis calcitrans;* the first word signifying sharp-mouthed, and the second kicking, given to the fly from the effect it produces on horses. It lays its eggs in dung, where its young are hatched, and pass through their transformations. The larvæ and pupæ do not differ much in appearance from those of common house-flies.

MEAT-FLY.—The large, buzzing meat-fly, named *Musca* (*Calliphora*) *vomitoria*, is of a blue-black color, with a broad, dark blue, and hairy hind body. It is found all summer about slaughter-houses, butchers' stalls, and pantries, which it frequents for the purpose of laying its eggs on meat. The eggs are commonly called fly-blows; they hatch in two or three hours after they are laid, and the maggots produced from them come to their growth in three or four days, after which they creep away into some dark crevice, or burrow in the ground, if they can get at it, turn to egg-shaped pupæ, and come out as flies, in a few days more; or they remain unchanged through the winter, if they have been hatched late in the summer. A smaller fly, of a brilliant blue-green color, with black legs, also lays its eggs on meat, but more often on dead animals in the fields.

CHEESE-FLY.—The well-known cheese-maggots (skippers) are the young of a fly (*Piophila casei*), not more than three-twentieths of an inch long, of a shining black color, with the middle and hinder legs mostly yellowish, and the wings transparent like glass.

HOUSE-FLY.—The house-fly of this country has been supposed to be the same as European *Musca domestica;* but I cannot satisfy myself on this point for the want of specimens from Europe. It is possible that our sharp-biting stable-flies, the meat-flies, and the house-fly, may really be distinct species from those which are found in Europe. Our house-fly is the *Musca Harpia*, or Harpy-fly, of my "Catalogue." It begins to appear in houses in July, becomes exceedingly abundant in September, and does not disappear till killed by cold weather. It is probable that, like the domestic fly of Europe, it lays its eggs in dung, in which its larvæ live, and pass through their changes of form.—*Dr. Harris.*

Keeping Poultry in Large Numbers.

LUTHER TUCKER, ESQ.:—In the Country Gentleman of 25th inst., D. H. R., of Hartford, Conn., wants to know *how* to build a chicken house for "about 1,000 fowls." If my poor opinion is worth any thing, *he will not build it at all.* Fowls, in any large number, will not thrive unless they have a *wide range.* They are, partially, a grazing animal. When the ground is bare of snow, in winter, they pick the grass if they can get it, and are fond of *green* vegetables of any kind. In summer they pick and eat grass every day. They are great scavengers after slugs, insects, and all kinds of flesh. They are better, also, for having some flesh food in winter; and abundant *air, fresh* and *pure*, they must have *always.* Although I have seen it tried, I never knew a large collection of several hundred fowls succeed *in a confined place.*

A few years ago some enterprising man from the country came near town, and enclosed an acre or two of ground with a high picket fence, and put up a building, at an expense of near or quite a thousand dollars, intending to supply eggs for the Buffalo market. He had his barn well done off with any quantity of roosts, nesting places, and other conveniences. He started his concern with seven or eight hundred chickens, and for a few weeks, crowing, cock-fighting, laying and cackling went on to his heart's content. He had food of all kinds for them and great anticipations were indulged of fortune-making in his chicken enterprise. But three or four winter months told the story. The fowls got diseased—the hens first eat the feathers off the *roosters*—or what were left of them after they had *fought* themselves almost bare, and then the hens unfleeced, in the same way, each other. They stopped laying, were tormented with lice, got the "roup," went moping about the place, and died off like a pestilence; and by spring, but a few miserable, sickly things were left, with scarce life enough in them to crow up the morning!

The difficulty was not in want of food nor care. But, from the necessity of the case, they were crowded in their roosts; they were disturbed by each other in their nests, and had not room enough any where, even with the outside range of an acre of land. The truth is, that to flourish, hens must have their *liberty*, when kept in large numbers. They want to range the fields by day and not be crowded at night. They want a *variety* of food and to *help themselves* to it. They need *exercise*, pure air, and enough of both. I knew one man, or rather the man's wife, in the Sciota Valley in Ohio, who kept five or six hundred fowls—that is, she told me she had that many—and I don't doubt it, for the whole territory, for acres about the farm, was speckled with them by day, and the trees and the corn-cribs and the barns and the sheds were filled with them at night. They had a great big farm of a thousand acres, or more, and full corn cribs for many rods in length, where the hens went at pleasure, and they made nests under the trees, and among the bushes, and all about the buildings, and in the back kitchen, and just where they had a mind to: and they sat on their eggs and hatched out their chickens at will—a self-sustaining poultry establishment, in fact. This plan worked; but as to the *profit* of it, I doubt whether the old lady could give any intelligible account in the matter.

No; I believe the only way to make poultry profitable is to keep them in the "old way." Proportion the number to the ground and buildings you have. Give them liberty to run at large for a portion of each day in warm weather, with comfortable quarters in winter, and pure air, always. I have known sundry other enterprises, like the Buffalo one I mention, tried; but I never

knew one *permanently* successful. They were all in turn abandoned. Yours truly, L. F. A.

Black Rock, Jan. 2, 1855.

—*Country Gentleman.*

The Greatest Grain Market in the World.

In the progress of our city and of the West generally, facts of the most astounding character not unfrequently come upon us unawares, and before we are prepared for them. If any one had asked us, two days ago, which of the great grain depots of the world (depots at which grain is collected directly from the producer,) was the largest, we probably would have named half a dozen before hitting the right one. If the same question were put to each of our readers, we doubt if any one of the whole number could answer it correctly, nor do we believe that any one of the whole number would credit the correct answer to the query, unless it was sustained by an array of figures, the truth of which could not be questioned. Our attention was called to this subject yesterday by a gentleman engaged in the grain business in this city, and with his assistance, we have given it a thorough investigation, the result of which, greatly to our surprise and gratification, establishes the supremacy of CHICAGO as a grain port over all other ports of the world! That there may be no ground for incredulity, we proceed to lay before our readers the statistics, gleaned from authentic sources, which confirm this statement. In the table which follows, we have in all cases reduced flour to its equivalent in wheat, estimating five bushels of the latter to one of the former. The exports from the European ports are an average for a series of years—those of St. Louis for the year 1853, those for Chicago and Milwaukie for the current year, and those for New York are for the past eleven months of the same year. With these explanations we invite attention to the following table:

	Wheat. bush.	Ind. Corn. bush.	Oats, Rye, Barley.	Total. bush.
Odessa,	5,600,000		1,440,000	7,040,000
Galatz & Ibrelia,	2,400,000	5,600,000	320,000	8,320,000
Dantzig,	3,080,000		1,328,000	4,408,000
St. Petersburg,		all kinds.		7,200,000
Archangel,				2,528,009
Riga,				4,000,000
St. Louis,	3,082,000	918,384	1,081,078	5,081,468
Milwaukie,	2,723,574	181,937	841,650	3,747,161
New York.	5,802,452	3,627,888		9,430,335
Chicago,	2,946,922	6,745,588	5,034,216	13,726,728

By comparing the exports of the different places mentioned in the above table, it will be seen that the grain exports of Chicago exceed those of New York, by 2,496,393 bushels, those of St. Louis by more than two hundred and fifty per cent., and those of Milwaukie nearly four hundred per cent. Turning to the great granaries of Europe, Chicago nearly doubles St. Petersburg, the largest, and exceeds Galatz and Ibrelia combined, 5,406,727 bushels.

Twenty years ago Chicago, as well as most of the country from whence she now draws her immense supplies of breadstuffs, imported both flour and meat for home consumption—now she is the largest primary grain depot in the world, and she leads all other ports of the world, also, in the quantity and quality of her beef exports!! We say the largest *primary* grain depot in the world, because it cannot be denied that New York, Liverpool, and some other great commercial centres, receive more breadstuffs than Chicago does in the course of a year, but none of them will compare with her, as we have shown above, in the amount collected from the hands of the producers.

What a practical illustration the above facts afford as to the wonderful, the scarcely credible, progress of the West—what an index it furnishes to the fertility of her soil, and to the industrious and enterprising character of her people—what a prophecy of the destiny that awaits her, when every foot of her long stretches of prairie and her rich vallies shall be reduced to a thoroughly scientific tillage! How long, at this rate, will it be before the centre of population and of wealth will have arrived at the meridian line of our city, and Chicago will have vindicated her right to be recognized as the great commercial metropolis of the United States? We verily believe such is the destiny that awaits her.—*Free Press.*

Preserving Flour and Meal.

The patented plan of Thomas Pearsall, of Hooper's Valley, N. Y., for preserving flour, meal and grain, from heating and souring, by having an open pipe running through the centre of a barrel of flour and meal, or a number of such tubes in bins of grain, we have tested and found to be an excellent invention. A barrel of Indian corn meal put up in May last, with one of his refrigerating tubes, is now as sweet as it was on the day it was packed. This improvement must lead to a great saving to our country, as it is calculated that no less than $5,000,000 is lost annually by the souring of flour and the heating of grain in piles,—much, if not all, of which may be saved by the application of this invention, which is neither complex nor expensive, but simple and cheap. A barrel of corn meal, packed in one of Pearsall's patent tubular barrels, arrived in this city on the 7th of this month from Louisville. It was put up in July, and shipped to New Orleans, was kept several weeks in the hold of a steamboat, and afterwards housed in a warehouse until about the 1st of December, and yet is now perfectly sweet.—*Scientific American.*

Quinces for Pickles.

I noticed in one of the late numbers of the *Farmer*, that you say that quinces are used only as a preserve. It is perhaps unknown to your readers that they make a *very* agreeable pickle, if boiled in vinegar, with brown sugar, to which are added cloves, cinnamon, &c. Even when they have been unluckily hard frozen, they will answer for this purpose—only less sugar will be then required. They are quartered and pared and the cores cut out. Ten pounds of fruit are boiled to which add five pounds of sugar and from three to five pints of vinegar, one ounce of whole cinnamon and half an ounce of whole cloves, and boil down, place in a jar and pour the hot syrup upon it. With many, the quince, baked like an apple, is a favorite, adding syrup or molasses and water to the dish in which they are baked. Those fond of a tart baked apple, will probably be pleased with the baked quince, and much prefer it.

LEWIS S. HOPKINS.

—*N. E. Farmer.*

For the Farm Journal.

Practical Work of the Farm.

MR. DARLINGTON:—Although my former communication under this head has not been responded to, I will continue to give my experience, hoping it will yet bring some of more value from the working farmers who patronize the Farm Journal.

I was one of the celebrated committee No. 18, that were expected in a few hours to carefully examine and select of each, the best of its kind, out of, I should think, two acres of agricultural implements, divided into half and quarter crae lots, by rows of poultry and marching columns, of the washed and unwashed million. And this too, in a cloud of dust that seemed to obscure every thing but the sun, who, in spite of it, kept the thermometer at blood heat. But notwithstanding our supposed supernatural powers of body and mind, I understand we received censure for not awarding the first premium for *horse power corn-shellers* to Reading's Patent. If any blame is deserved, I take it all to myself, and entirely exonerate the other members of the committee. Through the kindness of the proprietor of the Agricultural Warehouse at West Chester, I was permitted to take one of Reading's Shellers to my barn, and give it a trial before purchasing. I attached it to a tread-mill horse-power, and gave it, what I supposed a *fair* trial; and the next day returned it, not for its want of power to shell fast and clean, but because the speed could not be easily regulated when attached to that kind of horse-power; and also its breaking the grain and cob more than those exhibited by Pennock and Davis. The fault of the latter machines, is, they do not give work enough for horse-power; and you therefore wear your horse and power unnecessarily. To obviate all this, I requested Mr. Alexander Major of the Indian Run Factory, to construct one on the old plan, but with four holes instead of two, as formerly used; after I had given him the idea, he carried it out beyond my expectations. It has the same shafts, cogwheels, journals, &c.; the frame being made wide enough and the shafts long enough to admit another set of shelling wheels. He attached a cob-carrier, similar to the straw-carriers, with this exception, instead of the suspending straps, the cob-carrier is kept in its place by guide irons, working in holes in the posts of the machines. It has a large box like the feed trough of a wagon, hooked under the feeding holes. We do not alter our horse-power, when changing from wheat or oats, but if the corn is dry, we generally use a smaller horse. It will of course shell just twice as much as the two-holed when driven by horse-power with the same amount of hands; as the cob-raker is dispensed with, not a grain of shelled corn passes over the shaker. It shells by hand as well as the common kind; in this, having the advantage over Reading's, which can only be used for horse-power. I do not believe a committee would be justifiable in awarding a premium for an entirely new principle, when it was self evident, that a slight addition to the old machine would make it superior; it would lead us on the wrong track, and we could not arrive at the right place by following it.

I have advised the enterprising young men that now carry on the Indian Run Machine Shops, (Messrs. Page and Essick,) to send one of them to Mr. Entriken's Agricultural Warehouse, (West Chester,) that farmers may judge for themselves.

I have also a few words to say in another matter concerning this committee. We were required to award a premium for the "best corn cultivator," and (if I remember rightly) "for the best cultivator for general purposes." We soon agreed on the contracting and expanding hoe-harrow, for the best corn cultivator; and as I must confess I did not exactly know what was meant, by the best for general purposes, I left it to my associates. After they left for home there was some difficulty in pointing out the premium article, and as I was referred to, I think it quite likely I did them injustice by pointing out the wrong article; and if so, I owe an apology to the numerous family of scrapers, hoers, plowers, rooters, scratchers, diggers, and pickers, then and there assembled.

The best corn cultivator in connection with the hoe-harrow is the double shovel plow with steel points. It has several advantages over all other implements; by placing your hands forward you can put your weight over the shovel, and make it work in stony or unplowed spots; you can lift it over or around stumps or rocks, working up to them on every side, finishing a row at every round (if not more than four feet), and requiring no more space to turn on, than the horse would require without them. I never knew a practical farmer that once used one, to exchange it for any thing else; they are almost universally used in the north-western townships of this county, and fast spreading south and east; yet I doubt if one can be found in any Agricultural Warehouse in the State. But they have several objections as a mercantile article; they have no cast iron about them, and are not easily broken; any common country blacksmith can make or mend the iron work; and the farmer himself could at a pinch make the wood work. The very name of *hoko*, (which farmers used to swear by a thousand years ago,) sounds too old fashioned, and would be condemned in scientific circles.

I claim the honor of being the first to introduce them (as corn cultivators) in Chester county. I saw them used to put in wheat in Lancaster county, and their adaptation to corn cultivation, struck me at once; but if any one has an older claim, I will freely acknowledge his preemption right.

V. W. I.

Profits of Feeding.

MR. DARLINGTON:—I am not accustomed to write for the public, as it is trouble enough for me to write my own private letters.

I see many puffs in our agricultural papers about raising extra breed and heavy hogs, but nine times out of ten they never say how they feed their stock, or how old they were when slaughtered; now what does all that amount to in putting such stuff in our agricultural papers, which is not likely to benefit the community? Give us age and the mode of feeding, and then we can judge whether there is any thing extra about their stock; take for example the Suffolk breed in your last number and the cut accompaning the same; I care not how well they look on paper, as that does not tell me what profit it would be to change my breed and get Suffolks. Then again, take Mr. Stepleton's eight hogs with their different weights, and what does it all amount to; he don't say whether his pigs were one or two years old, neither does he say whether they were fed one year or six months, or how much corn they got.

I think, Mr. Editor, you will agree with me that our agricultural journals are intended to enlighten the community on all matters belonging to agriculture, and not for empty boasting.

I will give you and the public a sample of six pigs; three I slaughtered about New Years. They were then between five and six months old, and weighed from one hundred and forty to one hundred and sixty-five pounds; they were the smallest of the six I had; the other three I slaughtered when seven months old, the first weighed two hundred and twenty-five pounds, the second, two hundred and six, the third, one hundred and seventy-eight pounds. These pigs

were neither Suffolks, Berkshire, nor Chester county breed, but what I call a good Lancaster county breed and well kept; their keeping was for the first three months, about six pounds each of chopped corn and oats, half of each with water enough to make it into a thin slop, till within the last three months, when I increased the feed some little. I do not wish to be understood to boast on the subject, but merely to show what I would call a proper statement, to give every man a chance to know whether the stock spoken of is superior or inferior to his own. I wish it understood, that I have none of my stock for sale, but only write to give a satisfactory statement to the public. I hope Mr. Editor you will not hereafter publish any thing without there is a detailed account of expenses given upon the subject; we see almost every week, something of the kind put forth that is of no use only to mislead and deceive such as are willing to be the dupes. J. F.

Lancaster co., March 20th, 1855.

There is considerable force in our correspondent's remarks. Farmers are not so particular in counting expenses as they should be. It is not the mere weight of an animal, but the weight for food consumed, which makes the *profit* or otherwise. There is a *possibility* of every bushel of corn fed, being merely sunk, unless an account is kept accurately. There is one article, we have often thought much wanted and seldom seen about the barn, a Platform Scale for weighing not only feed, but also constructed so as to weigh smaller animals, calves, sheep, hogs, &c., while fattening. Those on wheels, so as to be readily moved about and calculated to weigh five to seven or eight hundred, can be purchased for about twenty-five dollars. It would also be a great convenience in selling grain, and its many advantages would soon amply repay cost.—Ed.

Allen's Mower.

Mr. Editor:—I see in the March number of your Journal, an account of the trials and difficulties of a correspondent, living near Penningtonville, in this county, in his unsuccessful attempts to mow with one of Allen's Mowers. He seems to think because he did not succeed very well, no one else could possibly have done any better; at least, he insinuates as much in his communication.

Now, if a person who is a judge of mowing, would look at a company of men cutting grass with a scythe, he could very readily see the difference in their performance; while one would appear to mow with ease, another would put forth his utmost exertions to perform the same work. Again, if you would put a scythe in the hands of a man who knows nothing about mowing, and set him to work in heavy, lodged grass, your correspondent's five acre lot, if you please, ten chances to one, he has to go to the "shop" as often as our worthy friend had to with his machine. It is the same with the mowing machine as with the scythe; if you have every thing in order, and somebody that can work it, it cannot help performing well and easy.

He complains of the draft being too much to one side, &c., as the "dozens who came to see it will testify, and all found fault with it." If I had had no better success, I would rather there would have been a few less than dozens to see me. He says, he employed a man to cut round the corners, as the machine would not do it without too much trouble. I would rather have a man to dig round the corners when I plow, than to cut around them where I am mowing; the only successful way is to cut on a square corner; hence our friend's difficulty in that respect.

Again, he says, he had a boy to throw away the cut grass when it was in the road of the machine in passing over. This was the fault of the driver, if he had driven with precision, the grass would not have been in the way. To perform rightly, you must drive exact; the knife must have full cut and no more; to give it less than full cut, it will catch the grass and choke. He complains of the knives getting loose; if he had taken an old axe and hammer, he might easily have fastened them. He also says, it would not "back;" if he had only thrown it out of gear, which is but the work of a moment, it would have backed with all ease. He next says, the screw burrs were continually coming off; if he had taken a cold chisel, and cut the bolts slightly, I'll warrant they would not have troubled him any more in that respect.

Since I saw this statment, I waited upon a neighbor for whom I mowed one day, and he says, I cut twelve acres; and part of it turned off three tons to the acre, and that I was hardly a day at it, as I was detained, somewhat, by the many visitors who came to see the operation. When they saw with what success mine performed, some of them said they would have them for themselves against another harvest; and I know of three having already sent in orders to procure them, for fear the supply would "not be equal to the demand," *as our friend says*. If he would only come over to Honeybrook, he could procure other evidence besides mine, as to the success of the mower, as there were others besides myself who used them to their entire satisfaction.

I think our friend made a slight mistake in his calculation as to the speed of the team; it would not require very fast horses to walk two miles an hour, to say nothing about how far good ones can go. The mower has a cut of four feet and a half, and the days some fifteen hours long, he can easily see, it would not be an over calculation, when I say if it were pushed a little it would cut fifteen acres in a day. He says, *they* were obliged to put three horses to the mower over there. Now you might just as well put three men to a scythe, for Allen's mower is made for two horses; the knives operate in the same manner as shears, and if they are kept close to the guards they will work easy, but if they are left apart, the blades not working closely together, they will work hard; and if you force it with three horses you are sure to break it. It would be a great pity indeed, if his want of success should discourage any one from getting so valuable a labor, money and time, saving machine.

PETER DAMPMAN.

Shaner Farm, Honeybrook, March 17th, 1855.

Selection of Seeds.

Every one ought to know that there is a great difference in the productiveness and flavor of our common garden products. In fact, some of the varieties are scarcely worthy of notice. Therefore when you go to the expense of laying out a garden, you should endeavor to procure none other than the choicest kinds of vegetables, and such as will afford a succession of crops. It is a great object with market men to raise the earliest and latest varieties, which always command the best prices. And it is no less important for families, who can, by proper management, derive the greater part of their living from the garden. The labor and cost of cultivation are no greater, while the profit and satisfaction are much increased.

In the beginning of your labors, you must of necessity procure the seeds from some enterprising neighbor, or a regular seedsman. In the latter case, go to a well known and responsible person,—if possible, one of your acquaintances. It is generally understood, that of the seeds annually exposed for sale, a very large part are worthless, having lost their vitality, or being of inferior varieties. The vexation of preparing land and realizing nothing, is equalled by waiting patiently for several months to obtain nothing but

a small, tough, stringy product. It is not a fine sounding name which makes a valuable variety.

But, with all your care, you may get deceived. Perhaps the seed will not vegetate, or it proves different from what it was represented. Even then you must not hastily impute blame to the seedsman. It cannot be expected that he should raise all that he sells, and he may have been deceived as well as yourself. In the absence of proof, or very strong grounds of suspicion, it certainly would be wrong to believe him guilty of fraud. You must not jump at a conclusion. Because the seed *did* not vegetate, is no evidence that it *would* not have done so if placed in favorable circumstances. That plants do not appear above ground, may have been caused by your own ignorance; perhaps the seed was buried so low that its tender stem could not reach the surface, or else covered so slightly that the germ, as soon as it manifested itself, was killed by the heat. Defect of germination may have been the result of natural causes, such as excessive heat or cold, or the extreme dryness or dampness of the ground. For these reasons, you should be positively certain, before you dare level a blow at a man's reputation.

To discover whether seeds possess the power of vegetation, is quite as important for your own benefit, as to test the seedsman's honesty. Sowing dead seed will occasion the loss of much time and patience. You should, therefore, take a little of that which you consider doubtful, and steep it in warm water for several hours, when, if it show unmistakable signs of sprouting, you may sow as soon as you please. The only way to discover whether you have been cheated in the quality of the plant, is to wait patiently until the crop comes to maturity.—*Schenek's Gardener's Text-Book.*

The Vitality of Seeds.

The vitality of seeds, under favorable circumstances, can be depended upon for the following periods:—

Parsnip,—Rhubarb,—and other thin scaly seeds,—for *one year.*

Balm,—Basil,—Beans,—Cardoon,—Carrot,—Cress,—Indian Cress,—Lavender,—Leek,—Okra,—Onion,—Peas,—Pepper,—Rampion,—Sage,—Salsify,—Savory,—Scorzonera,—Thyme,—Tomato,—Wormwood,—and small herbs generally,—for *two years.*

Artichoke,—Asparagus,—Corn Salad,—Egg-Plant,—Endive,—Indian Corn,—Lettuce,—Marigold,—Marjoram,—Mustard,—Parsley,—Rosemary,—Rue,—Skirret,—Spinach and Tansy,—for *three years.*

Borage,—Borecole,—Broccoli,—Brussels Sprouts,—Cabbage,—Cauliflower,—Radish,—Sea Kale,—Tarragon,—and Turnip,—for *four years.*

Beet,—Burnet,—Celery,—Chervil,—Cucumber,—Dill,—Fennel,—Hyssop,—Melon,—Pumpkin,—Sorrel,—& Squash,—from *five to eight or ten years.*—*Schenek's Gardener's Text-Book.*

The Grape.

PRUNING:—Decidedly the best mode of pruning for a cold house, or vinery without fire-heat, is what is called the long or renewal mode. Supposing the house to be planted with good young plants, something like the following mode of training and pruning may be adopted. The first season one shoot only is allowed to proceed from each plant, and this, at the end of the first season, is cut down to the second or third eye or bud. The year following two leading shoots are encouraged, the strongest of which is headed or stopped when it has extended a few joints beyond the middle of the house or rafter, and the weaker about half that length. In November these shoots are reduced, the strong one having four or five joints cut from its extremity, and the weaker one to the third eye from its lower end or place of origin. In the third season one leading shoot is laid in from each of these, the stronger one throwing out side shoots on which the fruit is produced, which side shoots are allowed to mature one bunch of grapes each, and are topped at one or two joints above the fruit. No side shoots are allowed to proceed from the weaker shoot, but it is laid in, to produce fruit the ensuing season, so that by the third season after planting, the lower part of the house or rafters is furnished with a crop of fruit proceeding from wood of the preceding year. At next autumn pruning, the longest of these main shoots is shortened about eighteen inches from the top of the rafter, and the next in strength to about the middle of the rafter, and all the spurs which had borne fruit are removed. Each vine is now furnished with two shoots of bearing wood, a part of old barren wood which has already produced fruit, and a spur near the bottom for producing a young shoot for the following year. In the fourth summer a full crop is produced, both in the upper and lower part of the house, the longer or oldest shoot producing fruit on the upper part of its length, and the shorter on its whole length; from this last, a leading shoot is laid in, and another to succeed it is produced from the spur near the bottom. At the next autumn pruning, the oldest or longest shoot, which has now reached the top of the house, is entirely cut out and removed, and replaced by that which was next in succession to it, and this in its turn is also cut out and replaced by that immediately behind it, a succession of a yearly shoot being obtained from the lower part of the old stem. [*McIntosh.*] This is decidedly the most successful mode for a vinery without heat, producing abundant and fair crops of fruit. Hoare, who is one of the most experienced and ingenious writers on the Grape, strongly recommends it, and suggests that "the old wood of a vine, or that which has previously produced fruit, is not only of no further use, but is a positive injury to the fertility of the plant. The truth of this remark depends on the fact that every branch of a vine which produces little or no foliage, appropriates for its own support a portion of the juices of the plant that is generated by those branches that do produce foliage."

ROUTINE OF CULTURE:—In a vinery without heat this is comparatively simple. As soon as the vines commence swelling their buds in the spring, they should be carefully washed with mild soap suds, to free them from any insects, soften the wood, and assist the buds to swell regularly. At least three or four times every week, they should be well syringed with water, which, when the weather is cool, should always be done in the morning. And every day the vine border should be daily supplied with water. During the time when the vines are in blossom, and while the fruit is setting, all sprinkling or syringing over the leaves must be suspended, and the house should be kept a little more closed and warm, than usual, and should any indications of mildew appear on any of the branches it may at once be checked by dusting them with flower of sulphur. Air must be given liberally every day when the temperature rises in the house, beginning by sliding down the top sashes a little in the morning, more at mid-day, and then gradually closing them in the same manner. To guard against the sudden changes of temperature out of doors, and at the same time to keep up as moist and warm a state of the atmosphere within the vinery as is consistent with pretty free admission of the air during sunshine, is the great object of culture in a vinery of this kind.

Thinning the fruit is a very necessary practice in all vineries—and on it depends greatly the flavor, as well as the fine appearance and size of the berries and bunches.

The first thinning usually consists in taking off all superfluous blossom buds, leaving only one bunch in the large sorts or two in the small ones to each bearing shoot. The next thinning takes place when the berries are set and well formed, and is performed with a pair of scissors, taking care not to touch the berries that are left to grow. All this time, one-third of the berries should be taken off with the point of the scissors, especially those in the centre of the cluster. This allows the remainder to swell to double the size, and also to form larger bunches than would otherwise be produced. Where the bunches are large, the shoulders should be suspended from the trellis by threads, in order to take off part of the weight from the stem of the vine. The last thinning, which is done chiefly to regulate the form of the bunch, is done by many gardeners, just before the fruit begins to color—but it is scarcely needed if the previous thinning of the berries has been thoroughly done.—*Downing.*

On the Impoverishment of Land.

We are all too apt to blame nature, entirely too much, for our own bad management. For instance, we say, Nature has formed certain crops, or plants, which are calculated to impoverish and waste the soil. Such is not the case; but man's waste and mal-practice exhausts the soil. But, you will inquire, "Does not oats and buckwheat exhaust the land?" My reply is, no; both oats and buckwheat are plants of quick growth, and shallow and fibrous roots, consequently having but a short time to take much from the atmosphere, and being shallow rooted, are limited in their supplies, and have to take what food they can get from the surface of the land, (and hence is the reason that they are good for eradicating weeds, briers and other rubbish,) while the greatest waste and exhausting of the land lies in the mode in which it is cultivated. For instance, in the crops above mentioned, the ground is broken up or plowed at just such a time when the rays of the sun have the greatest power for drying up land, and drawing up, or evaporating, ammonia and all other gasses which are absolutely necessary to vegetable life; and each shower of rain that falls, makes these gasses more soluble and more easily to be evaporated; so that the land, being exposed, looses more by evaporation than is necessary to support the plant. But the ground is not merely exposed for one season, but nearly invariably, for two or more, as your oat field of this season was your corn field of the year before, consequently, it was so plowed and so cultivated as to afford the sun's rays the greatest facility to penetrate the earth and evaporate the gasses, and then left bare all winter for the frost to do its work of destruction, and again re-plowed in the spring, and again left bare until the oats have attained a sufficient growth to shade it, and just at the time that it requires the shade the most, the oats are cut, and it is again left exposed and the plow once more started, to prepare the ground for wheat. Now, I do not say that that exposure of the ground can be entirely avoided, but still it might to a great extent, if the practice of sowing *clover*, whenever possible, was more generally adopted. For instance, when a corn field was worked for the last time, clover might be sown *thick* amongst the corn, and by the time the corn would be cut off, the clover would have attained a sufficient growth to cover the ground and not only keep it warm in winter and prevent evaporation, but would make a very nice coating to plough in the following spring. Besides, clover is the best *live mulching*, (for you can call it nothing else,) it having the property of living more from the atmosphere than from the soil, and by its long tap-root penetrating deep into the soil, conveys the ammonia and disperses it to a great depth. (Hence is the reason that clover and plaster, or clover and charcoal, improve the ground; for as the clover draws the ammonia from the atmosphere to, or in the soil, the plaster or charcoal absorbs it, and in return throws it out into the soil.)

But to return. We all know (if we will but give ourselves time to think,) that Nature *does not exhaust the soil.* For instance, where a forest is cleared off, that has stood for centuries, and thousands of tons have stood and grown on an acre, that, in place of the soil being worn out, it is the very richest of soils. And again, let a fence be run across a poor barren field, and in the course of a few years, that fence row will be the richest part in the field. Simply that from two or three feet each side of the fence is never plowed and seldom or never cleared or mowed of its spontaneous growth of grass, weeds, briers, &c., which act as mulching in two ways.—First, that while in the growing state they shade the ground from the scorching sun, consequently keeping the ground moist and preventing evaporation; and in winter, most of the tops of which die, and are by the rain and snow borne down and flattened to the ground, and therein preserve evaporation and form a second mulching. Still to prove more explicitly the great benefit of mulching, lay a board on the ground and allow it to lay over night when the Thermometer is, say about 20°, and the next morning, by turning it over, you will find the under side white with frost. The query would arise, what is this frost? and where did it come from? The answer is, it is the evaporation from the ground of the essential gasses caught by the board and there frozen, and when thawed, descends again to the ground; whereas, if the board had not been there, it would have been lost in the atmosphere, thus, plainly showing the constant evaporation that is going on from ground that is left bare and exposed. Consequently, the too often custom of ploughing the next season's corn ground in winter, must be, and is, most ruinous to the ground, for more escapes by evaporation between the time it is ploughed and the time it is planted, of its fertility, than would be required to raise the crop of corn.

Many more proofs could be advanced to show clearly the great waste of the fertility of land by exposure, and *vice versa*, viz., that by covering up or hiding the land from the light, and consequently from the sun's rays, not only improves it, but, in course of time, it will become immensely rich. As an example, who ever knew an old building (one that had no cellar under it,) removed, and did not find the ground under it rich in the extreme, and if ploughed up produce the finest crop of any part of the field. And again, look at the prairies, fertile in the extreme, after producing and bearing, year after year, from time immemorial, tons of vegetation. That of itself would prove most clearly, two points, first, the great benefit of mulching, and secondly, that nature does not waste or impoverish the soil. If man would only study to follow and assist nature, instead of going, as he does, directly against her, it would be much better for him in every respect.—*F. R. Garden's Note Book.*

Wash for Fruit Trees.

I have found the following a certain antidote for insects, or fungus, on vines and fruit trees:—1 lb. sulphur, 2 lbs. soft soap, 1 gallon tobacco water, and 2 gallons lime water; mix. To paint over all the wood.—*W. Collins, M. R. C. S., Drewsteignton.*

Value of a Pound of the Finest Flax Thread.

A single pound of flaxen thread, intended for the finest specimens of French lace, is valued at six hundred dollars, and the length of the thread is about two hundred and twenty-six miles. One pound of this thread is more valuable than two pounds of gold.

Munn's' Practical Land Draining.

We have not met for a long time, with a more seasonable, and so far as we have examined, a more valuable agricultural work than the above, just issued by Saxton, of New York. Farmers are now being so thoroughly awakened to the importance of draining their land, that it will be sought for with unusual interest. The author, B. Munn, has some celebrity as a landscape gardener, and appears to be entirely at home in treating his present subject. We give on this page, the introduction, with explanatory cuts, as preliminary to the practical portions, in two parts. Part 1, of the "principles and system of drainage," under its different heads of "examination of land requiring drainage," the "various systems of drainage," "deep drainage," thorough and surface drainage, &c. Part 2, of "levelling," "description of different kinds of drains," "materials," mode of cutting drains," "building the ducts," "filling up," cost, &c., with tables for measuring their solid contents. It is illustrated with numerous cuts of draining implements, tiles, levelling instruments and outlines to indicate the course of springs. Price only fifty cents, for sale by Parry & M'Millan, Fourth and Chesnut streets, and at the agricultural warehouses in Philadelphia. We have no doubt of a very extensive demand for it.

THE PHYSICAL LAWS ON WHICH THE DRAINAGE OF LAND DEPENDS.

The object sought by the drainage of land, being to remove water from it, it will be well to consider, 1st.—The sources from which the water which we wish to drain away is derived; and 2nd.—The natural laws to which water when still, and when in motion is subject.

The operation of heat upon the waters of the ocean and of the land is continuously producing evaporation, by means of which large quantities of water are carried, in the shape of vapor, into the elevated parts of the atmosphere, and are there retained in an invisible form by the agency of electricity. When a change takes place in the electric equilibrium, clouds are formed from the water so raised, which, becoming subject to the laws of physical attraction, are thereby brought in contact with the mountains, and more elevated parts of the earth's surface. Giving out part of their heat, these clouds descend again upon the earth in the form of rain, fog, or snow, according to the temperature, and other meteorological conditions of the atmosphere. Once again upon the surface of the earth, the water becomes subject to its natural laws, and it sinks into the earth, runs down the hill-side, or lays upon the surface, as it may happen from the physical condition of the particular place on which it chances to fall. The water which sinks downward through the soil, and that which is carried through the interstices of rocks and mineral strata, obedient to the laws of gravity and capillary attraction, is distributed beneath the ground to a greater or less depth, until it meets with strata that it cannot penetrate; then it flows along such strata, or accumulates in large bodies, either in hollow basins or diffused through extensive tracts of the subsoil, until it finds vent upon the surface in the shape of springs; or, in other cases, by spreading over a large mass of soil it is held in suspension by it in the same manner as by a sponge. The land so saturated becomes unfit for the purposes of the husbandman.

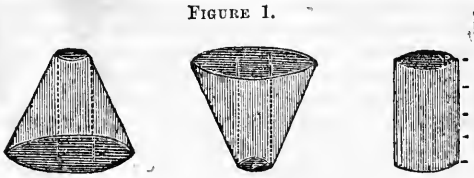
The natural laws by which water is governed are embraced by the two branches of science, called hydrostatics, which treats of water in a state of rest, and hydraulics, which treats of water when in motion. It is only requisite for the present purpose to state shortly some of the laws of these sciences, without presenting, except so far as necessary for explanation, the proofs by which the laws themselves are evidenced:

FIRST.—Water and all fluids, both liquid and gaseous, when at rest, press equally in all directions. This results from the extreme minuteness of the particles.

SECOND.—The pressure of a column of water upon its base depends upon its height and the area of the base; and not upon the thickness or width of the column.

Suppose *a* and *b*, Fig. 1, to represent two vessels of equal height and capacity. The pressure upon the bottom of *a* will be much less than that on the bottom of *b*. The pressure on

FIGURE 1.



b *a* *c*

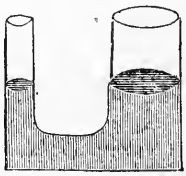
a, at the bottom, will be equal to a column of water represented by the dotted lines, but the pressure on *b* at the bottom will be equal to a column of water of the size of the whole base of *b*.

The pressure of water in proportion to its height upon a level base is exemplified at *c*, Fig. 1. If a vessel of water be supposed to be divided into four, or any number of equal parts vertically, the pressure upon any part is represented by the sum of the aggregate addition of the parts above. Thus, if the divisions are one foot apart, the pressure at the first division will be equal to a column of water one foot high, at the second division to a column two feet high, and so on.

THIRD.—Water at rest, and exposed on all parts of its surface to an equal atmospheric pressure, always stands at a uniform level, whatever be its shape or magnitude. In Fig. 2, the size of the two parts of the vessel are very different; but if water is poured into either end, and the surface of the water is left exposed to the atmosphere, it will rise in both sides to the same level. It is this law (in connection with the law of gravity) that causes rivers to flow, and water to percolate through the earth.

From this property of water arises one of the chief causes of springs. It will be an evident consequence of the first two laws above stated, that if water be accumulated in

FIGURE 2.

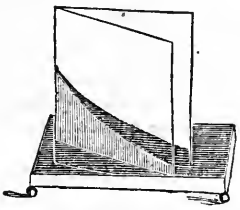


mass within a mountain or hill-side, beneath the surface, and it finds egress by a narrow confined passage at a lower elevation, that the force with which it will issue from its lower orifice will be in proportion to the distance it has descended; in other words, in proportion to the pressure of the superincumbent vertical column of water above it; and thence arises the cause of the fountain jet. When, therefore, in draining, a spring is dug into, and the water spouts up with violence, the source of it must be sought for in higher ground, either near or distant. For, in some geological formations the water may travel far beneath the surface.

FOURTH.—*Capillary Attraction.* This may be termed a law of the science under consideration, although it is frequently regarded in connection with the general properties of Matter. And it merits attention from the two-fold reason

of its apparent contradiction of the last-mentioned law, and also from its being a very constant agent in the production of the evils that it is the object of drainage to counteract. Capillary attraction is that property of matter which enables water in small tubes or spaces to rise above its common level. The most simple example is the ascent of water in a sponge. Place a sponge on a glass of water with one end of it just touching the water, and the water will ascend. Take two plates of glass, place their flat sides near each other on the one side, and touching each other on the other [Fig. 3], and then put their ends in water. The water will ascend between the plates and stand with a curved surface; the highest part being where the plates touch, as in the shaded line of the figure.

FIGURE 3.



In the same way, as through a sponge, will water ascend, and be held in suspension by the soil, as is familiarly exemplified by the ascent of water in a flower-pot from the saucer beneath it. It will equally ascend into the pot whether the latter contains a plant or earth only.

Capillary attraction, when drainage, whether natural or artificial, is efficient, becomes valuable in its operation upon the growth of vegetation. But it produces results so vastly extensive and so continuous in their effect, that its importance as a cause of surplus water must not be lost sight of by the drainer when he is investigating the condition of the land.

Having stated the chief natural laws applicable to the subject, let us briefly refer to their mode of operation.

[To be continued.]

Of the Inorganic Constituents of Plants.

Carbonic acid, water, and ammonia, are necessary for the existence of plants, because they contain the elements from which the organs are formed; but other substances are likewise requisite for the formation of certain organs destined for special functions peculiar to each family of plants. Plants obtain these substances from inorganic nature. In the ashes left after the incineration of plants, the same substances are found, although in a changed condition.

Many of these inorganic constituents vary according to the soil in which the plants grow, but a certain number of them are indispensable to their developement.

All substances in solution in a soil are absorbed by the roots of plants, exactly as a sponge imbibes a liquid, and all that it contains, without selection. The substances thus conveyed to plants are retained in greater or less quantity, or are entirely separated when not suited for assimilation.

Phosphate of magnesia in combination with ammonia is an invariable constituent of the seeds of all kinds of grasses. It is contained in the outer horny husk, and is introduced into bread along with the flour, and also into beer. The bran of flour contains the greatest quantity of it. It is this salt which forms large chrystalline concretions, often amounting to several pounds in weight, in the *cæcum* of horses belonging to millers; and when ammonia is mixed with beer, the same salt separates as a white precipitate.

Most plants, perhaps all of them, contain organic acids of very different composition and properties, all of which are in combination with bases, such as potash, soda, lime or magnesia. These bases evidently regulate the formation of the acids, for the diminution of the one is followed by a decrease of the other: thus, in the grape, for example, the quantity of potash contained in its juice is less, when it is ripe, than when unripe; and the acids under the same circumstances, are found to vary in a similar manner. Such constituents exist in small quantity in those parts of a plant in which the process of assimilation is most active, as in the mass of woody fibre, and their quantity is greater in those organs, whose office it is to prepare substances conveyed to them for assimilation by other parts. The leaves contain more inorganic matters than the branches, and the branches more than the stem. The potato plant contains more potash before blossoming than after it.

The acids found in the different families of plants are of various kinds; it cannot be supposed that their presence or peculiarities are the result of accident. The fumaric and oxalic acids in the liverwort, the kinovic acid in the *China nova*, the rocellic acid in the *Rocella tinctoria*, the tartaric acid in grapes, and the numerous other organic acids, must serve some end in vegetable life. But if these acids constantly exist in vegetables, and are necessary to their life, which is incontestable, it is equally certain that some alkaline base is also indispensable in order to enter into combination with the acids which are always found in the state of salts. All plants yield by incineration, ashes containing carbonic acid; all therefore must contain salts of an organic acid.

Now, as we know the capacity of saturation of organic acids to be unchanging, it follows that the quantity of the bases united with them cannot vary, and for this reason the latter substances ought to be considered with the strictest attention both by the agriculturist and physiologist.

We have no reason to believe, that a plant in a condition of free and unimpeded growth produces more of its peculiar acids than it requires for its own existence; hence, a plant on whatever soil it grows, must contain an invariable quantity of alkaline bases. Culture alone will be able to cause a deviation.

In order to understand this subject clearly, it will be necessary to bear in mind, that any one of the alkaline bases may be substituted for another, the action of all being the same. Our conclusion is, therefore, by no means endangered by the existence of a particular alkalic in one plant, which may be absent in others of the same species. If this inference be correct, the absent alkali or earth must be supplied by one similar in its mode of action, or in other words, by an equivalent of another base. The number of equivalents of these various bases, which may be combined with a certain portion of acid, must necessarily be the same, and, therefore, the amount of oxygen contained in them must remain unchanged under all circumstances, and on whatever soil they grow.

Of course, this argument refers only to those alkaline bases, which in the form of organic salts form constituents of the plants. Now, these salts are preserved in the ashes of plants, as carbonates, the quantity of which can be easily ascertained.

It has been distinctly shown by the analyses of De Saussure and Berthier, that the nature of a soil exercises a decided influence on the quantity of the different metallic oxides contained in the plants, which grow on it; that magnesia, for example, was contained in the ashes of a pine tree grown at Mont Breven, whilst it was absent from the ashes of a tree of the same species from Mont La Salle, and that even the proportion of lime and potash was very different.

Hence it has been concluded (erroneously, I believe), that the presence of bases exercises no particular influence upon the growth of plants; but even were this view correct, it must be considered as a most remarkable accident, that these same analyses furnish proof for the very opposite opinion. For although the composition of the ashes of these pine trees was so very different, they contained, according to the analysis of De Saussure, an equal number of equivalents of metallic oxides; or, what is the same thing, the quantity of oxygen contained in all the bases was in both cases the same.

100 parts of the ashes of the pine tree from Mont Breven contained:

Carbonate of Potash	3.60	Quantity of Oxygen in the Potash			0.41
" Lime	46.34	" " " Lime			7.33
" Magnesia	6.77	" " " Magnesia			1.27
Sum of the carbonates	56.71	Sum of the oxygen in the bases			9.01

100 parts of the ashes of the pine from Mont La Salle contained:

Carbonate of Potash	7.36	Quantity of Oxygen in the Potash	0.85
" Lime	51.19	" " " Lime	8.10
" Magnesia	00.00		
Sum of the carbonates	58.55	Sum of the oxygen in the bases	8.95

The numbers 9.01 and 8,95 resemble each other as nearly as could be expected even in analysis made for the purpose of ascertaining the fact above demonstrated, which the analyst in this case had not in view.

Let us compare Berthier's analysis of the ashes of two fir trees, one of which grew in Norway, the other in Allevard (department de l'Isere). One contained fifty, the other twenty-five per cent. of soluble salts. A greater difference in the proportion of the alkaline bases could scarcely exist between two totally different plants, and yet even here, the quantity of oxygen in the bases of both was the same.

100 parts of the ashes of firwood from Allevard contained according to Berthier, (Ann. de Chim. et de Phys. t. xxxii. p. 248,)

Potash and Soda	16.8	in which	3.42	parts must be oxygen.	
Lime	29.5	"	8.20	"	"
Magnesia	3.2	"	1.20	"	"
	49.5		12.82		

Only part of the potash and soda in these ashes was in combination with organic acids, the remainder was in the form of sulphates, phosphates, and chlorides. One hundred parts of these contained 3.1 sulphuric acid, 4.2 phosphoric acid, and 0.3 hydrochloric acid, which, together, neutralize a quantity of base containing 1.20 oxygen. This number, therefore, must be substracted from 12.82. The remainder 11.62 indicates the quantity of oxygen in the alkaline bases, combined with organic acids, in the firwood of Allevard.

The firwood of Norway contained in 100 parts:

Potash -	14.10	of which	2.40	parts would be oxygen.	
Soda -	20.70	"	5.90	"	"
Lime -	12.30	"	3.45	"	"
Magnesia -	4.35	"	1.69	"	"
	51.45		12.84		

And if the quantity of oxygen in the bases in combination with sulphuric and phosphoric acid, viz. 1.37, be again subtracted from 12.84, 11.47 parts remain as the amount of oxygen contained in the bases which were in combination with organic acids.

These remarkable approximations cannot be accidental; and if further examinations confirm them in other kinds of plants, no other explanation than that already given can be adopted.—*Liebig.*

Improved Cattle for the Dairy.

We gave last week a letter from Mr. Fish, of New York, on the subject of improved cattle for dairy stock. We now give some interesting statements condensed from a communication of Geo. Vail, Esq., of Troy, N. Y., a gentleman well known as one of the earliest importers, and most careful breeders in this country. Mr. Vail for a number of years imported and bred Shorthorns exclusively, but as his farm was not well adapted to grazing, and after fully proving what might be done with that class of cattle, he sold his herd in 1852, at prices ranging from $300 to $670, except some inferior and younger ones which sold for less.

Being partial to improved stock, he has, since his sale, been getting by importation, and selection in this country, a small and excellent herd of Devons. He says:—"This breed of cattle is my choice next to Durhams. So far as I have tried them, I am of the opinion, that when placed in localities where pasture is abundant, they may prove profitable to the breeder. The sprightly action, uniform color, and fine symmetry of the Devons, added to their intrinsic value, will render them popular when they become known."

(Mr. Vail's communication is in reply to one from Dr. Sprague, our State Secretary, and may be found at length, in the Ohio Agricultural Report for 1854, which will be issued in a few days.) Mr. Vail continues:—"You ask if for the small farmer either of the improved breeds of cattle will meet the public expectation, when we breed for milk and fattening qualities in the same animal, or whether a cross with the Holderness, or other breeds, would improve their qualities for all uses?

"In answering this question, I will premise by saying, I am aware that many Durhams have been bred with special reference to their aptitude to take on flesh, without much regard to their milking qualities, consequently many of these are unfitted for the dairy.

"There are, however, families, or tribes of Durhams. possessing superior dairy qualities, and when no longer useful as milkers, on account of age, or other causes, may be turned off, and will then take on flesh about as rapidly as those which are bred exclusively for the butcher.

"If I am correct in this opinion, then I am prepared to hazard the assertion, that no useful result can be arrived at by crossing the Shorthorn cow with any other breed, with the prospect of improving upon the dairy qualities of the best milking families or tribes of Shorthorns which may be procured in this country.

"That there are tribes of such Shorthorns, that are not inferior to the best native dairy stock in the country, I think there cannot be a doubt. If so, then it is obvious that it would be a waste of time to attempt to rear a new breed of cattle for dairy purposes, as such experiments would occupy many years to test their utility, it is believed that no practical breeder would attempt it.

"I now proceed to show, that there are specimens among Shorthorns of this country, which are superior to most if not all of the breeds of this country, for dairy purposes.

"In 1844, the New York State Agricultural Society offered a premium for the largest quantity of butter, to be the product of six cows, of any breed, in thirty consecutive days, the cows to be kept upon grass pasture, or green fodder, and not to be allowed slops or other feed for thirty days previous to, and during the trial. In order to test the dairy qualities of the Shorthorns, compared with other breeds, and thus give the great dairy interests of the country an opportunity to form a judgement of the relative merits of the different breeds of cattle for dairy purposes, I put six Shorthorns on trial, and kept them on grass alone, and the result was, they produced in thirty days, 262 lbs. and 9 oz. of butter, it being an average of 43 lbs. 12 oz., to each cow. To ascertain the quantity of milk the six cows gave, I carefully weighed and measured the milk drawn from them in one day, and the result was a weight of 265 lbs. 10 oz., and measured 134 quarts, wine measure, averaging 22½ quarts per day.

"It is proper to state that I had twelve cows, from which

I took the six for trial. This statement may be found recorded in full, in the Transactions of the New York State Agricultural Society, 1844, page 215.

"I had one cow, "Young Willey," that produced in seven days, 13½ lbs. of butter. I sold a two year old heifer, called "Ruby," daughter of the above, to S. P. Chapman, of Madison county, N. Y. He put this heifer on trial, when five or six years old to compete for a premium offered by the society above named, for the largest quantity of butter made from one cow in ten days in June, and ten days in August 1850, to be fed on grass pasture only. She produced a fraction over forty pounds of butter in these twenty days, and was awarded the first premium.

"Another cow I called 'Eunice 1st.' I had her milk, the produce of one day measured, and the result was thirty-two quarts wine measure. Eunice 2d produced in one day, thirty-four and a half quarts of milk, and there had previously been made from her milk, nineteen and a half pounds of butter in seven days. Beside the tribes of which the above were members, I had others of superior milking qualities, which I could refer to, and I doubt not there could be selected from the numerous herd of Shorthorns in this country, equally good milkers with those referred to.

"I do not desire to mislead any one in this matter, and therefore it is proper to say, that although it is a generally received maxim in cattle breeding that 'like begets like,' yet there may, and probably will be individual exceptions to this rule, relative to the milking qualities of the progeny of every animal bred from such cows. My experience is, that it is rare that a failure will occur, when uniform good milkers are bred to a male descended from an equally good milking stock. Hence it will be seen that the selection of the male is all important, when milking qualities are sought.

"I entertain the opinion, that cows, heifers or steers, reared from cows, possessing fine milking qualities, will, when needed for the shambles, put on flesh as fast, and with as little expense, as those not in possession of good capacities for milk.

"The milking and fattening qualities of the Shorthorns, (and those two qualities constitute the value of this, or any other breed,) are to be found in great perfection in most of the herds of the country in separate animals. By commingling these, there could be presented to the country a breed of animals of great value.

"In conclusion I remark, that it seems to me that there is another good reason for not attempting to improve by crossing, as the Shorthorns are a well established breed, perfected by a long course of scientific breeding, with pedigrees, for many generations recorded in the herd book, which will always prove a great convenience to such as may keep and breed the Shorthorn for dairy purposes,"—*Ohio Farmer.*

Knox's Patent Horse Hoe

This Hoe justly ranks amongst the most important recent agricultural inventions. Its shape may be understood by conceiving of the handles and beam of an ordinary plow, having two pieces of wood running backward from its sides, letter A fashion, at a point near the place where the horse is to be attached to the beam. At the point of the main beam, in which these two sides meet, is a cimetar cutter or colter, the office of which is merely to enter the ground and steady the machine during its action. At each of the other extremities of the two arms formed by the letter A is a miniature plow. In the rear of the main beam, and directly under the handles is placed a V shaped share, point forward. Upon the rear of the wings of this share are teeth, each tooth being about three inches long, and projecting backward. A wheel and regulating clevis are placed upon the front of the beam to which the horse or mule may be attached.

The action of this implement may readily be understood. The cimetar cutter, as already stated, steadies it; the miniature plows throw the soil to the centre, and the comb again distributes it. Let it be borne in mind that in the planting of corn the rows should be straight, and the Horse Hoe used before the weeds grow too large; this is also true of other crops. In hoeing corn it should be passed down the side of one row, and then above that of the next in order, through the length of the field, and afterwards crosswise in the same manner. It is generally used with the mould boards side in, for other crops as well as corn, unless it be desired to throw the soil against the plants, flat cultivation being now more generally adopted. The amount of labor necessary for its cultivation when the common plow and hand hoes only are used, deters many from giving this important crop the care it so justly deserves.

This implement of Mr. Knox, which is now being manufactured by Messrs. Ruggles, Nourse, Mason & Co., of Worcester, Mass., may truly be called a labor-saving machine, for by its use with the assistance of a single horse or mule a farmer may hoe as much corn in a single day, and do it as well, provided the rows are straight, as could be accomplished by twenty men by means of ordinary hand hoes.

It is known that in seasons of drought the frequent use of the hand hoe not only keeps down weeds but prevents crops from suffering as much as they would otherwise do during hot summer weather. The cause of this may be readily understood. During the most parching days of summer there is watery vapor in the atmosphere; air, in its passage through a well disintegrated soil not only is more freely admitted, but deposits a larger amount of moisture than if the soil was compact for want of cultivation, and this deposition takes place whenever the soil is at a lower temperature than the supernatant atmosphere. That the moisture spoken of is present, can readily be proved by a simple experiment. Let an uncorked empty bottle be exposed in open air during one of the hottest days of summer, and after the bottle shall have become thoroughly dried, and even considerably heated by the sun's rays, if it be then hermetically sealed and carried to an ice-house, before it shall have been there a single moment, globules of water will be seen to trickle down its inside in consequence of being surrounded by air of a low temperature, showing beyond the possibility of a doubt, the existence of watery vapor in the atmosphere during those seasons of the year when vegetation seems most to need refreshing and general showers. This phenomenon may also be observed when a cold pitcher is brought into a hot room; for in this case too, watery vapor may be seen deposited over its immediate surface. The question then that naturally presents itself to the mind of the agriculturist, is:—How can this watery vapor be made available to growing crops. The answer is, disintegrate the soil to a sufficient depth and no crop will suffer from drouth. Many years have elapsed since there was so favorable an opportunity of witnessing this fact practically tested on so grand a scale as during the past season; for through the length and breadth of the land there seemed to be poured forth with one accord an anxious desire for even as much rain as would moisten the parched earth. Never, therefore, was there so ample an opportunity for testing practically some important truths in scientific agriculture; for no crops suffered from drouth grown on soils, properly under-drained, where such was needed, as well as deeply surface, and sub-soiled plowed, and the immediate surface frequently disintegrated by Knox's Patent Horse Hoe, or other cultivator, in its absence. In corroboration of this I would state that during the past season I

have seen grown on soils so treated, and with no extraordinary amount of fertilizers applied, ninety and one hundred bushels of shelled corn to the acre, as well as other crops in proportion.—J. Payne Lowe.—*Cayuga Sachem.*

An Experiment in Deep Digging.

Last spring we took a corner of an old garden spot, which, though it had always been liberally manured and plowed as well as such a piece of ground could be, and to put it in a condition for fruit trees, we gave a good dressing of manure, and a thorough spading to the full depth of an unworn spade, the longest we could find in the market. In this spading operation, we often came in contact with a subsoil so stiff that it offered a strong resistance to the spade; still the spade was put in at the cost of much physical exertion. The old soil and manure were laid in the bottom of the trench, and the heterogenous and apparently sterile material on which it had reposed, were placed upon the surface. This new earth, upon much of which the sun had never shone, and the dew had never fertilized, was, in due time, planted with garden vegetables—not, however, in expectation of much crop, for the very surface gave almost positive assurance that such things would never grow there. They were sown and planted to furnish a motive for a continued tillage through the season, and in addition, the ground was planted out with dwarf Pear trees. The season in our region, as in many other sections of the country was one of distressing drouth—but very little rain from May to October—and, in consequence, the ground on this patch was probably oftener and more thoroughly hoed than it would have been, had the dews and rains fulfilled their labors as usual.

We now speak of the result. Our Pear trees (some twenty) on this patch, not only lived but made a desireable growth; and as for the vegetables—Melons, Cucumbers, Tomatoes, &c., &c., to the end of the catalogue—they gave us a crop superior to any we had raised for years.

From this operation we infer, in the first place, that deep and thorough tillage, and frequent stirring of the earth, are good preventives of the effect of drouth. The deeper and better pulverised the soil, the greater its power of absorption; consequently whenever there is much moisture in the atmosphere, such lands are certain to attract their full share of it. It is so, also, with the vegetable-nourishing gasses which the air from time to time contains. Such lands also suffer less in rainy seasons from excessive moisture, for the same qualities which enable them to absorb when there is a scarcity, enable them to throw off when there is a superabundance.

In the second place, deep and thorough tillage proves, to us, conclusively that the productive powers of earth are not always as nearly exhausted as many strive to imagine, but that the vile skinning, skimming system—the plowing three, four and five inches deep—is what induces the sterility which so many lament. Any clayey soil—and they are among the best for many purposes—may be made as barren as the desert of Sahara by such a system. Plow shallow and the earth under the furrow will lose the influence of the two essentials of fertility, sunshine and air, and will, of course, become cold, compact, and barren. Roots will avoid such earth; or, if they make an effort to penetrate it, it will be like attempting to extend themselves into a rock to meet the invigorating influence of an iceberg.

In tree-culture—especially in growing fruit trees—even a tolerable degree of success cannot be realized unless shallow stirring of the earth is given up and the earth *stirred deep.* Trees may, as we have seen, sometimes live in such shallow soils, but they will be stinted, sickly, and produce but ordinary fruit; but it is more often the case they die in the effort to live, and then comes the bitter denunciations on the nurseryman who reared them, the adverse climate, and sometimes the locality, and even the soil which, under favorable culture, would be just the thing for them, is blamed for the lack of those qualities which man in his indolence, or grasping after present gain, has taken from it.—William Bacon.—*Horticulturist.*

Lectures on Veterinary Science.

Extract from a lecture delivered by Dr. Dadd:

After alluding to the cause, nature and treatment of colic, the doctor stated that the bots originated from the larva of the gad fly, which being deposited on the sides and fore extremities of the horse in the form of *nits,* are licked off by the tongue of the horse, and thus pass into the stomach, and finally assume the form of a full grown *bot,* and that when capable of exercising an independent life, they leave the stomach, *their natural habitation,* by the alimentary passage and rectum, burrow into the earth and there undergo a sort of metamorphosis, acquire wings, and in their turn deposit nits, and thus perpetuate the species.

He proved, beyond a doubt, that they seldom do any harm, and quoted from authorities to their general innocuousness. That while in the stomach they cannot produce pain as is generally supposed, because they are located on the cuticular division, a portion of the stomach as insensible as the lining of the membrane of the fowl's gizzard, and that if ever found to have burrowed through the walls of the stomach into the abdominal cavity, they were there from the force of circumstances, occurring in the death of the horse, from peculiar causes, or from drenching the animal with strong medicine or poison.

If a horse happens to have a sudden attack of colic, or any other acute disease, and should turn his head towards the side, expressive of the pains and agony experienced, many people jump at the conclusion, that the horse is afflicted with bots, and all the "*Know Somethings*" seem to favor the opinion, and will scarcely believe otherwise; but this results from that backward mode of reasoning, that compels us to look upon the error, rather than embrace the light of science.

The horse may be destroyed by powerful medicines, but the *bot* being the monarch of his own domicil, the stomach, can refuse the dose you offer him.

The best way to rid the horse of the bots, is to turn him into a pasture in the spring, at which time the bot comes to maturity, and will then vacate his stronghold.

Bots cannot be killed by poisons, for they will live and grow fat on turpentine, and even on some of the mineral acids, so that it is folly to attempt their expulsion.

It was proved that all animals as well as man, are more or less pestered with various kinds of parasites, and

they seldom do harm. That the pig was often infested with animalculæ, so that its body was surcharged with the same, and this gave to pork that peculiar appearance known as measles.

The lecture was concluded with some very interesting remarks on animal physiology. After which, at the request of persons present, the anatomy and physiology of the foot, and the various methods of shoeing were discussed.

At the conclusion a vote of thanks was passed in favor of Dr. Dadd, for his instructive and interesting course of lectures.

It was remarked by Dr. Tewksbury, that a farmer might gain more practical information in one of these lectures, than he could in any other way, consequently it was to the interest of the farmer to encourage this sort of public teaching.

A Description of the Jenny Lind Seedling Strawberry.

There are so many new things constantly brought up before the horticultural world, and so much humbug about a great majority of them, that it is with diffidence I present to the public a description of the *Jenny Lind Seedling Strawberry*. It has been exhibited for three successive seasons in the Massachusetts Horticultural Society" rooms, and the writer, a member of the Fruit Committee, has had frequent opportunities to test and compare it with other varieties. It is entirely distinct from any other sort in cultivation here. It possesses many excellences, and in my humble opinion, is worthy of general cultivation. One of our first confectioners, who deals largely in ice creams, and who has used these as well as other varieties to flavor them with, says it is the best sort grown for that purpose. This speaks well for its flavor. The Fruit Committee have repeatedly recommended it; and gentlemen who have seen it speak in high terms of its appearance, and would gladly have paid a high price to be in possesion of it; but as yet the originator, Mr. Isaac Fay, of Cambridgeport, has kept it in his own hands. It will, however, be for sale this spring.

The seed from which it was obtained, was from a cross of Mr. Fay's old seedling and the *Early Virginia*. Fay's old seedling was a large strawberry but little known, and not considered equal to some other seedlings, and did not receive much attention, but possessed some good qualities, particularly the size. The *Jenny Lind* does not come up in size to this seedling, but is larger than the *Early Virginia*, and a most abundant bearer, ripening full as early, and equal to it in sweetness, if not superior. Out of more than two thousand plants obtained from seed, sown five years since, *this one alone* produced fruit the following summer; and it has continued to bear and increase in its good qualities ever since, flourishing equally in the shade as in the sun—some of the best fruit and plants having been under the thick foliage of fruit trees.

The plant is very hardy, with luxuriant foliage sending out strong, stout runners. The leaves are quite large on tall stems, and more serrated than common varieties. The blossoms are staminate; nearly all set fruit, and form well developed berries. The fruit averages well as to size, quite large, solid, of a fine conical shape. The color is of a rich crimson. The surface of the fruit is smooth and glossy. Seed—considerably indented. Flavor—superior; good judges who have tested it think it is not surpassed. It has ripened the eighth day of June for the last two years.

This strawberry will commend itself by its earliness and hardiness, by its beauty and high flavor, by its being an extraordinary and prolific bearer, and on account of the size and evenness of its berries.—Joseph Breck, *in Horticulturist.*

Bee Keeping.

Putting on and Taking off Boxes:—Putting on boxes may be considered a duty intermediate between spring and summer management. I cannot recommend putting them on as early as the last of April, or first of May, in ordinary circumstances. It is possible to find a case that it would be best. But before the hive is full of bees it is generally useless, and very likely a disadvantage, by allowing a portion of animal heat to escape, that is needed in the hive to mature the brood. Also, moisture may accumulate until the inside moulds, &c. Some experience and judgment is necessary to know about what time boxes are needed. That boxes *are needed* at the proper season, I think I shall not need an argument to convince any one in the present day. Bee-keepers have generally discarded the babarous practice of killing the bees to obtain the honey. Many of them have learned that a good swarm will store sufficient honey for winter, besides several dollars worth as profit in boxes.

Advantage of the Patent Vender:—Here is where the patent vender has taken the advantage of our ignorance, by pretending that no other hive but *his ever obtained such quantities, or so pure in quality.*

Time of Putting on—Rule:—It is probable a great many readers will need the necessary observation to tell precisely when the hive is full of honey; it may be full of bees and not of honey. And yet the only rule that I can give to be generally applied, is, when the bees begin to be crowded out, but a day or two before would be just the right time, that is, when they are obtaining honey—(for it should be remembered that they do not always get honey when beginning to cluster out). This guide will do in place of a better one, which close observation and experience only can give. By observing a glass hive attentively, in those cells that touch the glass on the edge of the combs, whenever honey is being deposited here abundantly, it is quite evident that the flowers are yielding it just then, and other stocks are obtaining it also. Now is the time, if any cluster out, to put on the boxes. When boxes are made as I have recommended, that is, the size containing 360 solid inches, it is advisable to put on only one at first; when this is full either of bees or honey, and yet bees are crowded outside, the other can be added. This is before swarming; too much room might retard the swarming a few days, but if crowded outside, it indicates want of room and the boxes can make but little difference. It is better to have one box well filled than two half full, which might be the case if bees were not numerous. The object of putting on boxes before swarming, is to employ a portion of the bees that otherwise would remain idly clustering outside two or three weeks, as they often do, while preparing the young

queens for swarming. But when all the bees can be profitably engaged in the body of the hive, more room is unnecessary.

Making Holes After the Hive is Full:—Whenever it is required to put boxes on a hive that has no holes through the top, it need not prevent your getting a few pounds of the purest honey that may be had, just as well as to have a portion of the bees idle. I always endeavor to ascertain in what direction the sheets of comb are made, and then mark off the row of holes on the top at right angles with them.

Advantage of Proper Arrangement:—Two inches being nearly the right distance, each one will be so made that a bee arriving at the top of the hive between any two sheets will be able to find a passage into the box, without the task of a long search for it; which I can imagine to be the case when only one hole for a passage is made, or when the row of holes is parallel with the combs. A hive might contain eight or ten sheets of comb, and a bee desirous of entering the box might go up between any two, many times, before it found the passage. It has been urged that every bee soon learns all passages and places about the hive, and consequently will know the direct road to the box. This may be true but when we recollect that all within the hive is perfect darkness—that this path must be found by the sense of feeling alone—that this sense must be its guide in all its future travels—that perhaps a thousand or two young workers are added every week, and these have to learn by the same means—it would seem, if we studied our own interest, we would give them all the facility possible for entering the boxes. What way so easy for them as to have a passage, when they get to the top, between each comb? That bees do not know all roads about the hive, can be partially proved by opening the door of a glass hive. Most of the bees about leaving, instead of going to the bottom for their exit, where they have departed many times, seem to know nothing of the way, but vainly try to get out through the glass whenever light is admitted.

I am so well convinced of this that I take some pains to accommodate them with a passage between each comb; they will then at least lose no time by mistakes between the wrong combs, crowding and elbowing their way back through a dense mass of bees which impede every step, until again at the top, perhaps between the same combs, perhaps right, perhaps farther off than at first; when I suppose they try it again, as boxes are filled sometimes under just such circumstances.

To assist them as much as possible, when new hives are used for swarms, I wait till the hive is nearly filled before making the holes to ascertain the direction of the combs. We all know it is uncertain which way the combs will be built, when the swarm is put in, unless guide-combs are used. When holes are made before the bees are put in, guide-combs as directed for boxes should be put in; (of course they should cross at right angles the row of holes.)—*M. Quinby.*

Test for the Expediency of Drainage.

John Johnson, of Seneca county, New York, gives in the American Agriculturist the following plan to ascertain whether land needs draining:—"Dig holes about two and a half feet deep in different parts of the field; put a cover over the holes so that the rainwater cannot get into them, and if they fill with water until within a foot or so of the surface, in ten or twelve hours, then his land requires, and will pay well for draining. I think I hear F. I. B., and many others say, that these holes will fill up on any land, if the ground is wet at the time. But I tell them it is not the case. You may dig as many drains as you please on dry lands, and they will never run water unless the snow is melting on the surface. If F. I. B. had stood over the making of between forty and fifty miles of drains, as I have done, he would be a better judge of what was wet and what was dry land. To the unpractised eye, land that looks dry, is gorged with water six inches below the surface."

Report on Some of the Diseases and Insects Affecting Fruit Trees and Vines.

By Thaddeus William Harris, Professor of Entymology of the Mass. Horticultural Society.

[To be Concluded next month.]

Pear Tree Insects.—Those most injurious to this tree are the *Slug-worms*, which destroy the leaves, the *Scolytus* or *Tomicus*, referred to in a preceding paragraph, and *borers*, which make their attacks on the stocks of dwarf trees that are grafted upon the quince. Pear trees likewise suffer occasonally from *bark-lice*. Within a few years, a new and probably introduced insect has made its appearance in great numbers on pear trees in the western parts of Connecticut and of Massachussets, particularly in the valley of the Housatonic, and in the adjacent counties of Duchess and Columbia in New York. This is

The Psylla, or jumping louse, which is probably identical with the same species that infests the pear tree in Europe. Some account has been given of it in the second edition of my "Treatise;" but the history is confessedly incomplete, and further particulars have been hoped for from Mr. T. Glover, of Fishkill Landing, whose opportunities for observing the habits of the insect are greater than mine have been. In some of its forms it is found on pear trees from May to October, and probably two or more broods are produced every year. These little insects live by suction, and obtain their food by puncturing the bark of young shoots, mostly in the vicinity of the buds. They defile the shoots with the fluid which they discharge in large quantities, and which soon forms a blackish crust on the bark. The best remedy that occurs to me is a wash of strong soap suds and sulphur, applied with a brush to the branches in the spring, before the buds expand. A solution of whale oil soap, thrown upon the trees, will kill the insects, but will have to be repeated at intervals through the summer.

Plum Tree Insects.—*The Plum Weevil, Curculio, or Conotrachelus Nenuphar*, continues to baffle all attempts to exterminate it. Cherries, apples, pears, peaches, and even the succulent warts of the plum tree provide for it abundant resources, in default of plums, its more appropriate food. We may save a crop of plums by covering the trees with fine netting or perhaps by coating the fruit with whitewash; but the other fruits above named will suffer all the more for our pains, and will furnish a numerous brood of depredators for the following year.

Nothing short of *killing the insects*, in some of their forms, will ever prove an effectual remedy.

The Slug-worm, Tenthredo, or Selandria (*Blennocampa*) *Cerasi*, which destroys the leaves of the cherry and of the pear, is also injurious to those of the plum. It is easily killed by dusting ashes or lime upon it, or by throwing upon the leaves a solution of whale-oil soap.

Cherry Tree Insects.—Those which attack the leaves are chiefly *canker-worms* and *slug-worms*, already referred to, and *rose-bugs*, which in some seasons are very injurious to them. The latter, as well as the *May-bugs* or *Melolonthæ*, may be gathered by hand on small trees, or may be beaten off with poles and caught in sheets spread beneath the trees The best time for doing this is in the evening or very early in the morning, when the insects are sluggish, and readily fall if disturbed. A large proportion of the fruit is spoiled every year by the grubs of the *plum-weevil*. The incautious eater doubtless does something towards checking the increase of the insects; but a remedy less repugnant to good taste remains to be discovered.

Peach Tree Insects.—*The Tomicus liminaris*, which lives under the bark of diseased peach trees, and has been supposed by Miss Morris, to be the cause of the yellows, has not appeared in my own trees, nor do I hear of its being found in others in this vicinity. Miss Morris's communication upon it may be seen in Downings's Horticulturist, Vol. IV., page 502.

The Peach tree borer, (*Ægeria exitiosæ*,) an entirely different insect from the apple tree borer, and operating in a different manner, namely, between the bark and the wood is more injurious to this tree than any other insect. Great care is necessary to prevent the tree from being fatally girdled at the roots by these pernicious borers. Frequent application of urine and ashes, and of hot soap suds, around the trunk, seem to have a good effect, being not only offensive to the fly when about to deposit her eggs, but also destructive to the young borers. After any lurking borers and the earth adjacent to the trunk have been carefully removed, a covering of strong paper around the base of the tree, tied above with a string, and secured at the bottom with a bed of mortar, has proved an effectual preventive against the attacks of the insects. I believe that the peach trees on plum stocks are never injured by these borers.

Natural History of New York, Vol. V.

"Natural History of New York; *Agriculture of New York*, comprising an account of the classification, composition, and distribution, of the soils and rocks, and of the climate and agricultural productions of the State, together with descriptions of the more common and injurious insects, by C. Emmons, M. D., Vol. V., Albany, 1854.

The Legislature of New York State has been very liberal in appropriating money for the purpose of publishing an illustrated report of its Natural History, &c., which has appeared in five quarto volumes. The former volumes we understand have been conducted with great ability, but the fifth by Dr. Emmons, the only one we have had an opportunity of examining, we are constrain- to say has fallen into most incompetent hands, and this part of the work must therefore be a miserable companion to those that have preceded it. This is the more lamentable from the fact that the evil of this misappropriation of money cannot be so easily repaired, and an opportunity has been suffered to pass without having been improved, for there cannot be a doubt that a work on the local entomology of any State or District of our country, with faithful descriptions and accurate illustrations would be both useful and interesting to the farmers, Horticulturists and others of the whole country.

When the second edition of Dr. Harris' very excellent and very able "Treatise on Insects injurious to Vegetation" was published, there was only one regret amongst Agriculturalists, Horticulturalists, and amateur or working Entomologists, and that was the absence of illustrative figures. But the author was not supported by a State appropriation, and *good* engravings are expensive appendages.

The volume under consideration might have furnished the country with what is wanting in Dr. Harris' book, but it has not done this, nor anything else worthy of the Empire State. Instead of being a faithful report on American Entomology, it appears to be merely a compilation of scientific descriptions of a few of such insects as are injurious to vegetation, mainly drawn from antiquated British sources, and even in this, there is not the proper discrimination made between insects that are injurious and those that are not.

The figuring and description of European Insects, and publishing them as American species, can be of no advantage to the the student of American entomology, as is the case in many instances in the volume we are considering—particularly such as *Clerus apiarius*, Pl. 2, fig. 8, *Chrysomela tremula*, Pl. 14, fig. 5, and *Cicindela campestris*, Pl. 17, fig. 6, and also others which are common foreign species, long ago and often described and figured, and found in nearly every cabinet collection in this country as well as those abroad. It is evident that the compiler did not possess the knowledge, that the work he had undertaken required, or he never would have queried and left unnamed the very common and destructive species of *Longicornia*, on Pl. 8, (*Clytus colonus* and *Clytus erythrocephalus*.)

Pl. 10. fig. 5, is our very common and very extensively known black "Wood-beetle," *Passalus cornutus* Fabr., but in the reference it is named *Scarites*.—It is with much reluctance that we part with this familiar subject of our early entomological associations. About the first too, from its large size, abundance, difficult locomotion, and black glossy coat of mail, that the juvenile entomologist becomes acquainted with and is enabled to capture. Still we congratulate him on his elevation to the "higher position," in which the *new* scale of insect graduation has placed him.* But we are thinking with such an uncongenial associate as *Scarites* and in the element in which *he* loves to delve, *Passalus* will be like a "fish out of water." *Passalus* is by occupation a carpenter, and both in the larvæ and perfect state lives upon and is found only in dead or decaying wood, particularly Black oak, whereas *Scarites* is a digger and lives and matures under ground, hence *Subteraneus*, the trivial

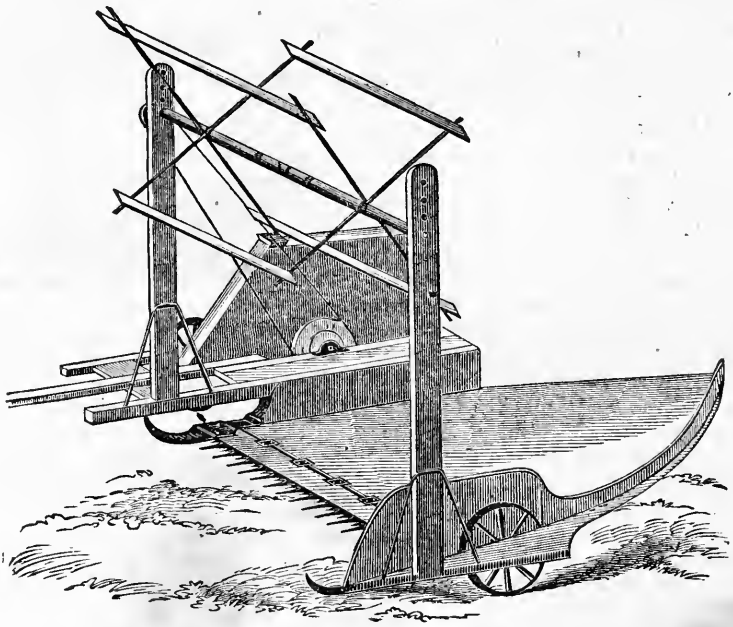
*In acknowledged system of classification *Passalus* is placed amongst the *Lamelicornia*, whereas *Scarites* occupies a position near the head of the *Carabidae*—but it would be tedious to both writer and reader to note all blunders of this kind that the book contains.

name of our most common species. The former when they occur in large numbers are capable of destroying much oak timber, and therefore may be classed with injurious insects, whereas the latter being predaceous in their habits, may rather be regarded as useful, and therefore insect friends. It is therefore important that their own acknowledged proper names should be associated with each, and their identity preserved intact.

We claim to be only an amateur in the natural sciences, but not the less ardent in our love on that account and especially for entomology. We therefore freely confess that our predilection for improved scientific arrangement has been not a little offended by the new Generic series of succession as adopted by Dr. Emmons in his system of classification.

The figures themselves as a general thing are very indifferent, some of which are scarcely recognizable, and others little else than the merest caricatures. But one of the worst features, and one that must be humiliating to a generous mind, is the fact, that whilst it is acknowledged that the anatomical figures have been mostly copied from the Naturalist's Library, yet on some if not on all of the plates, they are credited to E. Emmons, Jr. The *copying* of foreign plates to illustrate our local entomology is sufficiently discreditable, but for the copyist to affix his own name to them, is a climax in cupidity that sets every consideration of modesty at defiance.

The volume is devoted to all the orders, but the foregoing remarks refer to only a very few of the many errors in the *coleopterous* series. They will all however receive a passing notice in due time from competent sources. Thus in a practical as well as a theoretical sense, the blunders in this work become conspicuously apparent, its general usefulness impaired if not entirely negatived, and the duty of exposition imperative—and therefore for one we enter our solemn protest against its being a reflex of the present condition of entomology n the United States. S. S. R.



COMBINED MOWING AND REAPING MACHINE.

We are indebted to C. B. Rogers, 29 Market Street, for the above cut representing a combined Mower and Reaper, manufactured by him.

We have not seen it in operation, but Mr. Rogers assures us it has been tested for two seasons with entire satisfaction, and has taken the following premiums.

First premium for Mower, Salem county Fair, 1853, do. Burlington county, 1853, do. Camden and Gloucester, 1853. Special do. Mower and Reaper, Camden and do. 1854, First do. Burlington county, 1854.

First premium for Mower, Berks county, 1854, do New Castle county, Del., 1854, Silver Medal for Mower, Pennsylvania State Fair, 1854, do. and Reaper, Pa. do., 1854.

Ornamental Evergreen Hedges.

Judging from its being so rarely seen it would appear not to be generally known, that the common Hemlock, Abies Canadensis, answers admirably for hedging purposes, bears trimming well, and is we think altogether unrivalled among evergreens for this purpose. It may be planted either in double or single rows, about ten or twelve inches apart, the latter being preferable, more easily cultivated, and kept clean in its early growth. The habit of the hemlock is rather drooping, which tendency is displayed to great advantage when in the hedge row, and the peculiar lively green tint of the young foliage, gives it a most picturesque and graceful appearance unlike any thing else. The American Arbor Vitæ, in contrast with the hemlock, is quite stiff and formal, and does not so well retain its green color through the winter. It may, however, answer better where a dense screen is wanted; the Norway Spruce is preferable, though, for this. The handsomest specimen of Hemlock Hedging probably in this country is at the country seat of Moses Brown,

School House Lane, six miles from Philadelphia. He has several hundred yards of it growing in great luxuriance, and the admiration of all who see it. It is about four and a half feet high. Trimming is performed twice a year.

KETCHUM'S REAPER AND MOWER.

The above engraving gives a representation of Ketchum's mowing machine with the reaper attachment. The change from a mower to a reaper is effected by simply enlarging the main wheel by the addition of an outer rim of sufficient thickness, which is easily attached by bolts in sections. These are circular fitted and bolted with one bolt.

The advantages claimed for this arrangement are :—

1st. Raising the cutters sufficiently high for cutting grain.

2d. Lessening the motion of the knives without any change of gearing, which is desirable in cutting grain, as much less motion is required than for grass.

3d. Raising the cogs of the driving wheel, thereby preventing them from being filled with dirt.

4th. Reducing the draft of the machine at least one-third.

5th. Attaining the above objects without complicating the machinery, not a screw or bolt having to be changed.

Ketchum's combined reaper and mower is all made of iron, the frame and finger bar being of wrought iron. Price in Philadelphia, $135.

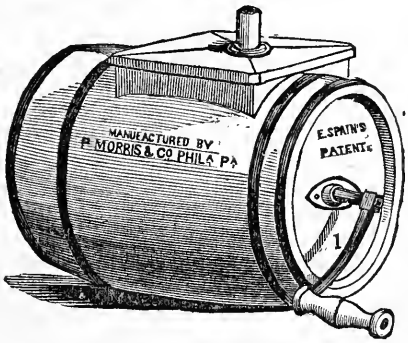
We are not aware of Ketchum's combined machine having yet been tried in Pennsylvania, but it is said to have been well tested in New York, and worked to entire satisfaction, cutting from ten to fifteen acres of grain per day.

Patents on mowing and reaping machines are accumulating rapidly. We have no interest in them, farther than to keep our readers advised of improvements, and of the peculiar arrangement of each, leaving to them entirely the decision of *which is the best.* The question of which is the best mower, and which the best reaper, has become one of the great questions of the day, at least to the farming community. Even with all the disadvantages of their first season's trial, and the imperfection of their manufacture in many cases, there are but few, if any farmers, who have tried them, who would now be willing to go back to the old scythe and cradle, or sickle.

The two mowers which have been most generally used in this section and most esteemed, are Ketchum's and Allen's. Several hundred of them were sold in Pennsylvania last season, and where they were well made, gave, we believe, general satisfaction. The reputation of Allen's machine has no doubt suffered by the very imperfect manner in which many of them were manufactured—attributable in part to the very unexpected demand, causing the materials to be gotten together too hastily. These defects, we understand, are being fully remedied the present season.

The proprietor of Ketchum's patent having wisely retained the right to manufacture in one or two hands, they have proved more uniformly of good, durable construction. All that have as yet been brought to this market have been made at Buffalo.

Any manufacturers of reaping or mowing machines not heretofore described in the Farm Journal, can cheerfully have the benefit of a description and insertion of a cut in our pages, which will be a benefit all around.



SPAIN'S PATENT CHURN.

We wish to be cautious of giving the sanction of the Farm Journal to new and untried implements, or those of doubtful character, and prefer that inventors or patentees, in introducing their articles to the public, and making use of our columns, which we cheerfully accord in every case of probable merit or usefulness, should do it in their own language, and on their own responsibility. We vouch for nothing we have not known and tried. *Spain's patent atmospheric churn*, of which the above engraving gives a pretty good representation, is one of the articles we can recommend with entire confidence, from our own knowledge, and from the experience of several years trial in Philadelphia and adjoining counties. It took the first premium at the last Pa. State Fair, has been awarded, at different times, a silver medal from the Franklin Institute of Pennsylvania, and has never yet been exhibited in competition with others without receiving the first premium. The dashers are the patentable part of its construction, being so made as to give a kind of transverse motion to the cream, keeping it constantly agitated, and bringing every portion into successive contact with fresh particles of the atmosphere through the open tube in the lid. They also can be lifted out entire by unscrewing the handle, making the cleansing much easier and more thorough. Persons have frequently remarked to us of how much better quality their butter was from this churn than others, and asked for a reason. We presume the reason to be that while in other churns, the fetid gas always generated by the

churning process, is retained within and among the cream and butter, of course affecting its flavor and quality, is with Spain's churn allowed constant escape through the open tube in the lid, while the atmosphere, at the same time has as free ingress. The patentee does not contend that butter will come quite so quickly in his churn, as in some others, which have now and then been for a short time before the public, but that *better* butter will be made in a shorter time. It is known there is a possibility of butter coming too quickly, so quickly as to be soft and oily without consistence. To make *good* and *firm* butter, requires a *reasonable* time, and a good article cannot be made short of it. Spain's churn, in addition to its peculiar construction also has the reputation of being generally well and strongly made. It comes in sizes, from three dollars and twenty-five cents, to seven dollars and larger ones for horse power are made to order.

Chauncey P. Holcomb.

Since our last issue, we have to record the decease of another prominent friend of agricultural improvement and successful practical farmer, Chauncey P. Holcomb, formerly a member of the Philadelphia bar, and representative of this city in the State legislature. He had for the last fifteen years, resided on a farm near New Castle, Delaware, and given his attention entirely to agricultural pursuits. His Devon stock was celebrated all over the country, and has been widely disseminated. He had but recently added to his herd some fresh importations. C. P. Holcomb, also had a high reputation as one of our very best agricultural writers and public speakers, and was frequently called upon for public addresses, which abounded in practical suggestions, and have contributed very much to create a taste for country life and improve the ordinary system of management especially in the improvement of stock. His style of writing and speaking was *terse*, *practical*, and at the same time fluent, differing in these particulars, most favorably from the rapid and declamatory agricultural addresses of the day, which often *begin* "with Adam the first tiller of the soil," and end with nothing which a matter of fact farmer can make available.

In the unexpected death of our friend Holcomb, agriculture, as well as the social circle in which he moved and of which he was so bright an ornament, will long feel the void.

Raising Root Crops.

We hope none of our readers will let this month pass over without putting in a plentiful crop of roots for next winter's supplies. We believe many will be *driven* to it who have the past season experienced the cost, of making beef and butter from pure grain, at the present high rates, some of whom perhaps sold rather bare early in the winter under the temptation of high prices and now have to buy at still higher. The prospects for the farmer were never more flattering than now, but to avail himself fully of them it is indispensible for him to practise a little of what he has been calling *book farming*, viz: raise root crops, plow deeply, pulverize thoroughly, manure heavily and with such kinds as are adapted for the crop he is raising. Various experiments have proved that at least one third and probably one half *less* grain will do as much good, when fed in conjunction with roots, Carrots, Parsnips, Beets, Ruta Bagas, &c. When corn is worth ninety cents, or one dollar, oats seventy cents, and with a dozen or more cows or steers requiring feed, this saving will be quite an important item. An acre of land under proper culture, will readily produce six hundred to one-thousand bushels of roots, and even if sold, what crop will nett more money? Carrots, the past winter, and almost any winter have readily commanded fifty cents per bushel, and the demand for them is rapidly increasing as food for horses, at the livery stables. The *expense* of planting, *continued seeding*, and cultivation, deters many from root culture. The weeds will grow and require attention when it cannot be spared, but we will now repeat, what we have before shown, how this difficulty can be easily avoided, by destroying the weeds before putting in the crop. After the ground has been well plowed which should be very early in the season, the harrow should be passed over repeatedly, at least twice a week so as not only to thoroughly break up and pulverize all the lumps, but also to kill seeds of weeds just germinating by exposure to the action of the hot sun. If any one will examine his fields before harrowing, particularly if it has been well manured, he will find millions of weeds all over the surface, just sprouting and in a condition to be destroyed, by each successive harrowing. This will not cost a tithe of the expense of their destruction *after* the crop is planted, and will be done more efectually.

Meeting of the Executive Committee of the State Agricultural Society.

The first quarterly meeting of the Executive Committee of the Pennsylvania State Agricultural Society, was held at the office of said Society, in Harrisburg on Tuesday, the 17th of April, 1855.

President of the Society in the chair, Members present Messrs, James Gowen, H. N. McAllister, A. O. Heister, John Strohm, Abram R. McIlvaine, James Miles, Isaac G. McKinley, Thomas P. Knox, George H. Bucher, William Bigler. David Mumma, Jacob S. Haldeman, Alfred L. Elwyn, Algernon S. Roberts, John P. Rutherford and Robert C. Walker.

Two communications were received from Chauncey E. Goodrich. of Utica, New York, accompanying a large variety of seedling potatoes which were sent by him for the use of the Society. The potatoes were properly distributed among the members, with a request that a report upon each variety as to their product, and adaptedness to the soils of Pennsylvania, be made at a future meeting The thanks of the Society were voted to Mr. Goodrich. Also communications from Isaac B. Baxter and Frederick Watts, regretting their inability to attend the meeting of the Executive Committee. Also a communication from Peter A. Browne, of Philadelphia, recommending the introduction into Pennsylvania, of the "Angora Goat." The letter was authorised to be published in the transactions. Also a communication from Joseph Bailey, proposing to sell a tract of land in Perry county, to the trustees of the Farmer's High School of Pennsylvania, which was refered to said trustees. The following communication proposing to *donate* two or two hundred and fifty acres of land in Centre county, for the purpose of

an Agricultural School, was received from General James Irvin, and ordered to be published, and referred to the trustees of the Farmers' High School.

BELLEFONTE, Feb. 22d, 1855.

To the Executive Committee of the Pennsylvania State Agricultural Society. Gentlemen:—Feeling a deep interest in the early and efficient organization of the Farmers' High School of Pennsylvania, I observed with pleasure that the legislature now in session have repealed the act of April 13th, 1854, and passed an act of incorporation more acceptable to the friends of Agricultural science. But much yet remains to be done. Land susceptible of a high state of cultivation is to be procured, suitable buildings erected, a library, apparatus, &c. provided. The surplus funds of the Pennsylvania State Agricultural Society I fear will be inadequate to this object. Whilst I hope that the legislature will not adjourn without making such reasonable appropriation as the interest of this great Agricultural Commonwealth demands, I take this opportunity of proposing through you to the trustees to give the institution a tract of improved land, containing from two hundred to two hundred and fifty acres (the land is good lime stone clay soil situated in Harris township, Centre county,) provided the Farmers' High School of Pennsylvania be erected thereon. The tract is pleasantly situated at the junction of the Penn's and Nittany valleys, near the geographical centre of the State, in a rich populous and healthy district and within twenty two miles of the Pennsylvania rail road, at Spruce creek. Whilst such an institution will give such impetus to the agricultural prosperity of the State at large, it will prove especially beneficial to the particular district in which it shall be established; and I therefore desire its location in Centre county. If we would add dignity to manual labor, if we would have it held in honor by the community, we must associate it with science; and if we would lessen the expense of acquiring scientific knowledge, so as to bring the cost within the means of the farming community, we must connect its acquisiton with manual labor. These as I understand are leading objects of the Farmer's High School of Pennsylvania, and if as has been suggested, such an institution properly organized, with aid of the surplus funds of your society and a reasonable appropriation from the State, can afford to the young men of Pennsylvania, able and willing to work (when work is required of all, and esteemed honorable) a scientific practical education, at an expense of less than "seventy-five dollars" per annum, it will be productive of benefit to the community, the full extent of which, time only can develope, and future generations only tell.

I remain very respectfully yours, JAMES IRVIN.

The following resolutions were offered by H. N. McAllister, and unanimously agreed to. *Resolved*, That the thanks of the friends of agricultural science are justly due to Gen. James Irvin, of Centre county, for his generous offer of two hundred or two hundred and fifty acres of land, to the Farmers' High School of Pennsylvania, on condition that the institution be located thereon. *Resolved* That the Secretary be, and he is hereby directed to lay before the trustees, the proposition of Gen. Irvin, and the proposition of James Miles, of Erie county, as published in the proceedings of the late annual meeting, together with all similar offers which shall be received prior to the meeting of the trustees in June next. *Resolved*, That in the hope of exciting emulation and inducing similar propositions from the citizens of other sections of the State, the above resolutions be published.

James Gowen, chairman of the committee to prepare a premium list for the next annual exhibition, made report which after being amended was adopted, and two thousand copies ordered to be printed in phamphlet form.

In accordance with the constitution (this being the first quarterly meeting) George H. Bucher, was re-appointed Treasurer, and Robert C. Walker, Recording Secretary for the ensuing year. The correspondence between David Landreth, President of the "Philadelphia Society for Promoting Agriculture," and the Hon. Marshal P. Wilder President of the United States Agricultural Society, upon the subject of the latter Society holding an exhibition in Pennsylvania, was presented by Algernon S. Roberts. The correspondence being before the committee, a resolution was offered by A. S. Roberts, to the effect that the assent of the Pennsylvania State Agricultural Society, be given to the United States Agricultural Society, to hold an exhibition this fall in Pennsylvania which gave rise to considerable discussion, and the assent refused by a large majority.

The following committee was appointed to fix the place for the next annual exhibition, and instructed to locate it at Harrisburg, provided the citizens thereof furnish the grounds free of charge, and contribute to the Society within ten days, the sum of fifteen hundred dollars: JACOB S. HALDEMAN, H. N. MCALLISTER, ABRAM R. MCILVAINE, ISAAC G. MCKINLEY, ROBT. C. WALKER.

On motion of David Mumma, it was resolved that the Corresponding Secretary be requested to correspond with, and select a suitable person to deliver the annual address at the next exhibition. On motion, committee adjourned.

Book Notices.

THE PRACTICAL FRUIT, FLOWER AND VEGETABLE GARDENER'S COMPANION, by Patrick Neill, L. L. D. F. R. S. E., adapted to the United States. Edited by G. Emerson, M. D., with notes, and additions by R. G. Pardee; published by Saxton, N. Y., and for sale by D. Landreth, 21 and 23 South 6th st., Philadelphia. Price $1 25. This is an octavo volume of over four hundred pages, illustrated with numerous engravings. The bare mention of the names connected with its publication is of itself a sufficient recommendation. We may say however, that it contains a vast amount of reliable information on the subject of which it treats, and we are convinced after brief cursory examination of its contents, that there are few of our most experienced gardeners and fruit growers, that would not find on perusal, hints of far more value than the price of the volume, while to the novice or to those of limited experience, it must be of great value.

COLE'S AMERICAN FRUIT BOOK, by Jewett & Co., Boston. Twenty thousand copies have been sold of the above standard work. It has been long and favorably known to Pomologists, and is often refererd to for information not attainable elsewhere.

BRECK'S BOOK OF FLOWERS, published by Jewett & Co., Boston. This is one of the most valuable treatises in the country on the culture of trees, plants, shrubs, flowers, &c. It should be in the hands of every one

who owns a garden, and wishes reliable, practical information for its management.

The Farm School Appropriation.

We had hoped to have been able to announce in this number, the fact, that the Legislature had made an appropriation in aid of the Farmers' High School, but we are compelled to forego this pleasure. We are not without hope, however, that it may yet be made before the close of the session. It is difficult to conceive how an intelligent body of gentlemen—the principal portion of whom are the representatives of the Farming interest, and the remainder representing constituencies almost as favorable to agricultural improvement as the farmers themselves,—should hesitate one moment in regard to this measure, against the intrinsic merits of which, no single member of either house has been willing to urge an objection. The subject has been brought officially before the Legislature by the following ably written memorial of the President of the State Agricultural Society, and we repeat, "we are not without hope," that the practical good sense of the members of the General Assembly will lead them to make an appropriation, of at least ten thousand dollars for the establishment of the Farmers' High School.

To the Hon. Wm. M. Hiester, Speaker of the Senate:—

SIR:—By the recent act of incorporating "The Farmers' High School of Pennsylvania," I was, *ex officio*, as President of "The Pennsylvania State Agricultural Society," made a Trustee of that Institution. By virtue of this position, and in accordance with the zeal that has so often urged me to efforts in furtherance of the interests of Agriculture, I most respectfully approach your honorable body, and entreat it to take into consideration the expediency of appropriating a fund adequate to the founding of the Farmers' High School, upon a respectable and permanent basis, commensurate with the great interests it is intended to promote, and the dignity and character of the institutions of Pennsylvania.

The Legislature, in 1851, chartered the State Agricultural Society, and appropriated to its use two thousand dollars annually. Had this grant been withheld, the charter, in all probability, would have remained to this day a dead letter upon the statue book. So, in like manner, it may be apprehended, that without adequate pecuniary aid, the charter of the Farmers' High School may remain inoperative.

Although the bounty to the State Agricultural Society gave a starting point to the Farmers of Pennsylvania, by enabling the Society to hold agricultural exhibitions, and award premiums to the most commendable specimens of live stock and farm products; and although these exhibitions were as successful as their most sanguine friends could have hoped, yet they could accomplish but little more than the stirring up a laudable rivalry among the few exhibitors, who were already in advance of the general condition of the great body of their brother farmers throughout the Commonwealth; for of the real tillers of the soil, from the interior rural districts, but a small number ever witness a State Agricultural Exhibition. The deduction from this is, that to improve *throughly* the Agriculture of the State, something more is required than exhibitions. The benefits resulting from these displays were limited mainly to the net receipts that accrued to the Treasury of the Society, and to a certain popularity, produced by the novelty of the exhibitions, among classes not strictly Agricultural. The popularity of Horse and Cattle Shows is unreliable, and susceptible of being turned to an account different from that ostensibly claimed for them. Such excitement, at best, is no proof that the great and needful work of improvement is going on upon the farms; for as yet no apparent increase has been effected in the average per acre of grain, corn, &c. The exhibitions have their influences for good, if properly conducted and restrained within due bounds. The Farmers' High School, however, can never be in danger of taking a wrong direction.

As regards our State Agricultural Society, no well founded complaint can be urged against it. Its affairs have been conducted in the most unexceptionable manner, and has gained for it the confidence and respect of the landed interest. It has undeviatingly pursued the legitimate path designated by the Legislature, when it obtained a charter and the means to enable it to pursue its destined course. It has never squandered, in needless display or folly, a dollar of the fund derived from the State, but has managed it so well as to be able, at this time, to show two talents for the one entrusted to its care. The Society is now able and ready to contribute the ten thousand dollars towards establishing the Farmers' High School, authorized by the act incorporating the School. So much (and less could not be said) for the character and condition of our noble State Agricultural Society. If, then, the gratuity vouchsafed to Agriculture, through the State Society, has, like good seed well sown and cultivated, produced so satisfactory a harvest, should it not encourage the Legislature to seed a greater breadth in a field more invitingly conditioned, from which a hundred fold yield may confidently be expected—yea, a thousand fold yield! That field is "The Farmers' High School of Pennsylvania."

Let the Legislature endow this School with but twenty thousand dollars, and my life upon it, it will, in a brief period, by the improvement of land, by the increase of grain, roots and corn; beef, pork, butter and cheese, produce millions per annum to the State, over and above her present or prospective agricultural resources, unaided by such an educational institution. It is hardly necessary to explain or argue this before a Legislature composed chiefly of farmers, who must know the low average per acre of our grain crops, especially our lamentable deficiency in beef, pork and dairy products. This untoward condition will begin to ameliorate, only when one good Agricultural School and model farm shall be established, capable of performing the functions of a Normal institution, whereat teachers can be taught and trained in an enlightened, thorough knowledge of systematic culture and husbandry. Is it too much to anticipate that, in a few years, after the opening of the Farmers' High School, every county having an Agricultural Society, will be able to boast of having also its Farm School and experimental farm? Who will not devoutly pray for such a consummation?

Let it not be imagined that, in approaching the Legislature, I desire to enlist political influence in favor of Agriculture. Far be the thought from me. I would rather see the wheel of Agricultural progress sunk even deeper in the rut than ever I had witnessed it, than invoke such aid, or attempt to extricate it by the force of any partizan, political movement. I appeal only to the Legislature as the representative of the industry of the State, to aid that pervading and paramount branch of industry, which, if permitted to languish, enfeebles every other industrial pursuit. The farmers of Pennsylvania want no political protection in the shape of "Corn Laws." They want simply to be afforded the means and opportunity to learn their trade, so that they may skilfully and understandingly draw forth the latent treasures of the soil, not more for their own individual benefit than to promote the general prosperity of the Commonwealth. Respectfully, JAMES GOWEN,

Trustee, ex officio, of the Farmers' High School of Pennsylvania.

MOUNT AIRY, March 28, 1855.

Pennsylvania Horticultural Society.

The stated meeting of this association was held Tuescay evening April 17th, in Concert Hall. R. Buist, Vice President, in the chair.

The exhibition was remarkable for the richness, beauty and variety of the plants and cut flowers, in the many contributions shown, and afforded much gratification to the numerous members and visitors in attendance. Each collection presented interesting specimens. In Mr. Buist's were three seen for the first time—*Azalea vittata rosea, Epacris minuata splendens* and *Verbena Kurtz's defiance*; the collection of twelve were choice and well grown; the six Azaleas were handsome plants, and the six Cinerarias were fine. Among those from Mr. Dundas' houses were three Orchids, one shown for the first time, the *Cypripedium barbatum*, the specimen *Azatia variegata* was a gem, and *Conoclinum ianthinum* choice, the collection of twelve were select, consisting of three fine *Rhododendrons, Gardenia, Stanleyana, Begonias*,&c.; the six were *Begonias, Cuphea,* and *Deutzia*; there were also distincts collections of *Gloxinias, Cinerarias* and Hyacinths. Gen. Patterson's gardener brought half a dozen of beautiful and well grown plants which were much admired. From Mr. Cope's houses were three *new* plants—*Thiboutia pulcherrima, Cypripedium barbatum* and *Tropœcolum violae fiorum*; the specimen plant was the *Henfreya scandens*, and the collection of six were choice plants. John Tucker's gardener had a *new* and interesting *Acacia alata*, shown for the first time; the six *Azaleas* were beautiful and the six standard plants were handsome. Henry A. Dreer sent a collection of twelve of the choicest Roses. John Sherwood, a fine new Seedling Camelia and other Seedlings of merit; also a new everblooming Pink—Wilmer's Laura and a new hardy *Delphineum Hendersonii*. John Lambert's gardener brought six beautiful Cinerarias. D. R. King's, a handsome specimen plant, the *Rinchaspermum jasminoides*. Peter Raabe exhibited a large vase containing a great number of blooming *Hyacinths*, growing in moss, a beautiful object. Charles Miller displayed a very fine collection of *Pansies, Auriculas, Calceolarias* and Stocks, Martin Gundlach, two set of *Pansies*. John Gray, a dwarf *Azalea Coccinea* and *Erica Caffra*. A. Burnett, gardener to H. P. Mc Kean, *Azalea Stanleyana*.

Baskets and Bouquets were shown by Mark Hill, gardener to M. W. Baldwin; J. J. Habermehl, gardener to John Lambert; Jerome Graff, gardener to Caleb Cope; C. O'Brien, gardener to D. R. King, and James Kent, gardener to J. F. Knorr—the latter not in competition. Jonathan Baldwin, of Chester county, brought specimens of the Indian and Carthouse Apples. Mark Hill, gardener to M. W. Baldwin, exhibited Cauliflowers, Lettuce, &c. Mr. Thompson, gardener to Mr. Tucker, Cucumbers. and John M'Laughlin, Rhubarb.

The following Premiums were awarded by the Committee on Plants and Flowers:—*Roses*, 12 plants, for the best, to Henry A. Dreer. *Azaleas* 6 plants, for the best, to Wm. Thompson, gardener to John Tucker; Specimen *Azalea*, for the best, to Robert Buist; for the second best, to John Pollock, gardener to James Dundas. *Hyacinths*, for the best to John Pollock, gardener to James Dundas; for the second best to Peter Raabe. *Cinerarias*, 6 plants, for the best to J. J. Habermehl, gardener to John Lambert; for the second best to Robert Buist. *Pansies*, 10 plants, for the best and second best to Charles Miller. *Collections of* 12 *plants*—for the best to Robert Buist; for the second best to J. Pollock, gardener to James Dundas. *Collections of* 6 *plants*—for the best to Wm. Thompson, gardener to John Tucker. *Specimen Plant*—for the best to C. O,Brien, gardener to D.R. King; for the second best to John Pollock, gardener to J. Dundas. *New Plants*—first premium three dollars to Jerome Graff, gardener to C. Cope, and premiums of one dollar each to J. Pollock, R, Buist, and Wm. Thompson. *Table design*—for the best to C. O'Brien, gardener to D. R. King. *Basket*—for the best to Mark Hill, gardener to M. W. Baldwin; for the second best to J. J. Habermehl, gardener to John Lambert. *Bouquets*—for the best pair to the same; for the second best to Jerome Graff, gardener to C. Cope. *Special Premiums*—two dollars to Peter Raabe for a vase of Hyainths; three dollars to Charles Miller for Calceolarias stocks and other plants,and one dollar each for collection of plants to Isaac Collins, gardener to Gen. Patterson, to Jerome Graff, gardener to C. Cope and to JohnPollock, gardener to James Dundas. The Committee notice a beautiful seedling Camellia of a cherry red color and a beautiful monthly blooming carnation, shown by John Sherwood.

By the Committee on Vegetables—*Cucumbers* for the best two, to Wm. Thompson, gardener to John Tucker.

Rhubarb—For the best 12 specimens to John McLaughlin, and a special premium of four dollars to Mark Hill, gardener to M. W. Baldwin, for a collection of Cauliflowers, Cucumbers, Radishes and Lettuce; very fine for the season.

The Secretary announced that he was authorized by John Fisk Allen, the author of the superb work on the "Victoria regia," to present the society with a copy, and on motion a tender of the thanks of the Society were ordered for this appropriate gift.

The Committee of Publication was instructed and authorized to prepare the transactions of the Society from the commencement, and print 100 copies.

The following resolutions were submitted by Mr. Buist, and unanimously adopted by the Society:

Resolved, That this Society has learned with the deepest sorrow, the death of Thomas Hancock, who departed this life (from an attack of pneumonia) at his residence, near Burlington, New Jersey, on the 21st ult., in the 54th year of his age.

Resolved, That in acknowledging the sudden bereavement with which this Society has been visited, it also expresses its keen appreciation of the severe loss the various institutions with which the deceased was connected in his native State and elsewhere; and to the promotion of whose aims, he ever brought a rare practical intelligence, an ardent zeal and sound judgment.

Resolved, That whilst the life of so useful a citizen might be fittingly presented as an example worthy of imitation on the part of a large body of surviving friends, the void which his death has occasioned cannot be more intensely experienced than by the members of this Society, with whom he co-operated for so long a period in the discharge of official duties, (being at the time of his death a member of no less than four of its most important Committees.)

Resolved, That although this Society is far from sanctioning the publication of fulsome memorials of *living* men, yet it deems a sketch of the life, character and labors of its departed member, a proper subject for the pages of those journals, to the interest of which he had so often contributed; and trust that the principal one in our land will favor its readers with such other notice of this distinguished horticulturist as may be due to his memory.

Resolved, That this Society especially condoles with the immediate family of Mr. Hancock, in the sad dispensation which now afflicts them, but hopes, nevertheless, that in reviewing the blameless career of their honored head, they will find much to comfort and solace them in their distress.

Resolved, That copies of these resolutions, signed by the President and Secretary, be transmitted to Mrs. Hancock, and to the publishers of such horticultural journals of the country as are received at the rooms of the society.

Pumpkins and Squashes.

We know of no vegetable genus in which there is so much confusion of names and characters among cultivators, as the Pumpkin and Squash tribe, or Cucurbita of Botanists. Their common names have so multiplied, that a farmer wishing to grow some for his stock, or his table, can hardly tell what to ask for at the seed stores, or what will be the character of his crops when obtained.

Knowing that T. W. Harris, the distinguished Entomologist of Massachusetts, had been paying special attention to this subject, with the view to some reliable and scientific classification, we addressed him the following queries, to which he has most kindly responded.

TO THE EDITOR OF THE FARM JOURNAL:—In your communication, you request to be informed what is "the distinction, if any, between the Boston and Vegetable Marrow Squash, also between the Connecticut Field Pumpkin and the Cheese Pumpkin; what is the Valparaizo Squash, and is it a desirable variety; what are the distinctive marks of the Winter and Summer Crook-neck Squash, Early Egg or Apple Squash, Pattypan Squash, Turban Squash, Cashaw Pumpkin, Mammoth Pumpkin, Acorn Squash; what are the correct names and synonymes of these kinds; which of them is most valued in New England for pumpkin pies, and which for stock and field culture?"

In September, 1834, Mr. John M. Ives, of Salem, Mass., exhibited in Faneuil Hall, Boston, a new squash, to which he subsequently gave the name of the "Autumnal Marrow Squash." It was figured and described in Fessenden's New England Farmer, vol. XIII, No. 16, Oct. 29, 1834, page 122, and again in Fessenden and Teschemacher's Horticulral Register, vol. I, No. 3, March, 1835, page 93. This fruit thus introduced and brought into notice, soon became a great favorite, and has ever since been extensively cultivated for table use, as a sauce and for pies, in the vicinity of Boston. So popular has it become in the market of Boston, that it may well be called "the Boston Squash," though I never heard that name applied to it. Mr. Ives, in his description of it, called it a variety of *Cucurbita melopepo*, which is an error. If not a mere variety of Commodore Porter's Valparaiso Squash, it doubtless descended from the same stock as the latter. It must not be confounded with the kind cultivated in England under the name of "Vegetable Marrow," a very poor vegetable, as I am assured by friends who have eaten it in London, and apparently one of the sorts which in New England would be called Summer Squashes. The "Autumnal Marrow" is eaten only when fully ripe; the "Vegetable Marrow," like your "Cymlings," is eaten only in unripe state. The former comes into eating in September, but may be kept with care till March. When pure or unmixed by crossing with other kinds, it is considered as the very best autumnal and winter squash in New England. Many cultivators have allowed it to degenerate or become mixed with the larger and grosser Valparaiso, so that we do not often find it in entire purity in our markets. It generally has only three double rows of seeds. For a description of it, see the works before cited, also Cole's New England Farmer, vol. I, No. 12, May 26, 1849, p. 185.

I am not sure what is the fruit denominated Connecticut Field Pumpkin, and the Cheese Pumpkin is unknown to me except by its name in catalogues.

The Valparaizo Squashes, of which there seem to be several varieties, known to cultivators by many different names, some of them merely local in their application, belong to a peculiar group of the genus *Cucurbita*, the distinguishing characters of which have not been fully described by botanists. The word squash as applied to these fruits is a misnomer, as may be shown hereafter; it would be well to drop it entirely, and to call the fruits of this group pompions, pumpkins, or potirons. It is my belief that they were originally indigenous to the tropical and subtropical parts of the western coast of America; they are extensively cultivated from Chili to California, and also in the West Indies, whence enormous specimens are sometimes brought to the Atlantic States. How much soever these Valparaizo pumpkins may differ in form, size, color, and quality, they all agree in certain peculiarities that are found in no other species or varieties of *Cucurbita*. Their leaves are never deeply lobed like those of other pumpkins and squashes, but are more or less five-angled, or almost rounded, and heart shaped at base; they are also softer than those of other pumpkins and squashes. The summit or blossom-end of the fruit has a nipple-like projection upon it, consisting of the permanent fleshy stile. The fruit-stalk is short, nearly cylindrical, never deeply five-furrowed, but merely longitudinally striated or wrinkled, and never clavated or enlarged with projecting angles next to the fruit. With few exceptions, they contain four or five double row of seeds. To this group belong Mr. Ives' Autumnal Marrow squash (or pumpkin) before named, Commodore Porter's Valparaizo squash (pumpkin), the so called Mammoth pumpkin or *Cucurbita maxima* of the botanists, the Turban squash or Acorn squash, *Cucurbita piliformis* of Duchesne, the Cashew pumpkin, Cole's Connecticut pie squash, Stetson's Cuba squash, and his hybrid called the Wilder squash, with various others.

The variety introduced from Valparaizo by Commodore Porter, became known to me about the year 1830, since which time it has been more or less cultivated in New England both for the table and for stock. It is of an oblong oval shape, of a pale reddish yellow color externally when ripe, nearly smooth, and very slightly furrowed, and often grows to a large size. It readily mixes with the Autumnal Marrow, but is inferior to it in quality. It may prove better and more valuable in the Middle and Southern States than in New England.

The Turban, sometimes called also the Acorn squash, because when the fruit is small it resembles somewhat an acorn in its cup, seems to be the *Cucurbita piliformis* of Duchesne. The middle lower figure of the group on page 283 of the volume on "Timber Trees and Fruits," in the "Library of Entertaining Knowledge," seems intended for the Turban squash. It sometimes grows to a large size, measuring 14 or 15 inches, in transverse diameter, and looks like an immense Turkish turban in shape. Specimens raised in my garden in 1851 were little more than ten inches in diameter, and weighed ten pounds or more, having very thick and firm flesh, and but a small cavity within. They proved excellent for table use, equal in quality to the best Autumnal Marrows. They keep quite as well as the latter.

The earliest account of the Cashew pumpkin that has fallen under our notice, is contained in the English translation of Du Pratz's History of Louisiana, (vol. II, p. 8), where it is called *Cushaw*. In the original French work, the name given to it is *Giromon*. Du Pratz described two varieties; one round, and the other curved, or of the shape of a hunter's horn. The latter was considered the best. The Cushaw or Cashew pumpkin is not cultivated or much known in New England. I raised some specimens of the crook-necked variety, (which has only three double rows of seeds), a few years ago, from seeds received from New Jersey. They did not ripen well, and many of them rotted before half ripe. They are evidently too tender for a New England climate. From the account given of them by Du Pratz, they seem well suited to Louisiana, where they are much esteemed. See his work.

The genuine Mammoth pumpkin, or true *Potiron* (*Cucurbita maxima*), may be considered as the typical species of this group, having rather soft, roundish heart-shaped, and entire leaves, a short cylindrical fruit stem, a permanent fleshy stile, and five carpels or double row of seeds. The form of the fruit is an oblate spheroid, depressed at the blossom and stem ends, and marked with ten or more wide meridianal furrows. It sometimes grows to an immense size, two feet or more in diameter, and sixty pounds or more in weight, being light in proportion to its size, on account of the large hollow within. It is known to vary much in color and size, and somewhat in form. In some of its variations, it may have lost its original characteristic form, so far as to be no longer recognized. If this be true, Cole's Connecticut pie squash, the round Valparaiso squashes, and several others, may be merely varieties of the Mammoth pumpkin. To some of the varieties of this fruit the name *Giromon* or *Giromont*, otherwise written Giraumon and Giraumont, signifying a rolling mountain, seems originally to have been applied, in allusion to the form and size. French writers subsequently transferred this name to certain varieties of the *Cucurbita pepo*.

The plants of the foregoing Valparaizo, or *Potiron* group, are more tender and less hardy than those of the common pumpkin or *Pepo* group; they are also much more subject to the attacks of worms or borers (*Ægeria cucurbitæ*) at the roots. Their fruits, compared with common pumpkins and winter squashes, have a thinner and more tender rind, and finer grained, sweeter and less strongly flavored flesh, on which accounts they are preferred by most persons for table use.

The second group contains the common New England field pumpkin, Bell-shaped and Crook-necked Winter squashes, the Early Canada Winter squash, the Custard squash, and various others, all of which (whether rightly or not cannot now be determined,) have been generally referred by botanists to the *Cucurbita pepo* of Linnæus. This group is readily to be distinguished from the first one by the following charcters. The leaves are rough, and more or less deeply and acutely five-lobed. The fruit has only three carpels or double row of seeds, and the stile drops off with the blossom. The fruit stem is long, and clavated or enlarged next the fruit, where it spreads out into five claw-like projections; and is five-angled and deeply five-furrowed. The fruit is eaten only when fully ripe, and it may be kept with care throughout the winter. The rind, though sometimes quite hard, never becomes a woody shell, and the flesh remains juicy and succulent till it rots, never drying up into a spongy or fibrous substance, in which respects these fruits differ from what are called Summer squashes. The seeds are not so broad, thick or plump, and white as those of the potiron group, but are smaller, thinner, and of a greyish color.

The common field pumpkin of New England, which formerly was extensively raised for stock, and is still used for the same purpose, and of which our pumpkin pies and pumpkin sauce were made, till the winter crook-neck and autumnal marrow came to be substituted therefor, has a form somewhat resembling that of the mammoth pumpkin, but its longitudinal often exceeds its transverse diameter, its color is of a deeper yellow or orange, the furrows on its surface not so deep or broad, and its rind much thicker, and in some varieties quite hard. Its flesh is rather coarse, of a deep orange yellow color, and of a peculiar strong odor. Baked pumpkin and milk, pumpkin sauce, and dried pumpkin for winter use have had their day, and gone out of fashion; and pumpkin pies are now mostly made of the autumnal marrow and crook-necked winter squashes, except by some of the old folks, who still prefer the pumpkin, baked in a milk-pan, and without any pastry.

The New England "crook-neck squash," as it is commonly but incorrectly called, is a kind of pumpkin, perhaps a genuine species, for it has preserved its identity to our certain knowledge ever since the year 1686, when it was described by Ray. It has the form and color of the Cashaw, but is easily distinguished therefrom by the want of a persistent stile, and by its clavated and furrowed fruit stem. Before the introduction of the Autumnal Marrow, it was raised in large quantities for table use during the winter, in preference to pumpkins, which it almost entirely superseded. Many farmers now use it instead of pumpkins for cattle; the vine being more productive, and the fruit containing much more nutriment in proportion to its size. It varies considerably in form and color. The best kinds are those which are very much curved, nearly as large at the stem as at the blossom end, and of a rich cream color. Some are green, variegated with cream colored stripes and spots. Some are bell-shaped, or with a very short and straight neck, and are less esteemed than the others; for the neck being solid and of fine texture, is the best part of the fruit. These crook-necks can be kept all winter, if not exposed to frost, and I have eaten of them when a year old. On account of its hardiness, its fruitfulness, and its keeping qualities, this is perhaps the most valuable variety to the New England farmer. It is said to degenerate in the Middle and Southern States, where probably Commodore Porter's Valparaizo or some kindred variety may be better adapted to the climate.

The Early Canada squash seems to be a precocious and dwarfed variety of the common crook-neck. It is smaller, with a short and often straight neck, and is of a dark and dirty buff color externally. It comes into eating early, quite as soon as the autumnal marrow, and was, indeed still is, much esteemed as a table vegetable.

The custard squash or pumpkin is an oblong, deeply furrowed, and prominently ten-ribbed fruit, with a pale buff and very hard (but not woody) rind, and fine, light yellow flesh, much esteemed in the making of pies and puddings. For a figure and description of it, see Cole's New England Farmer, Vol. III, No. 4, Feb. 15, 1851, page 59. From seeds received from Paris, under the name of Patagonian squash, I raised a fruit exactly like the custard squash in form and size, but of a dark green color externally and entirely worthless as an article of food. Nevertheless I infer that the custard squash is merely an improved variety from the same original stock.

The fruits belonging to this second group probably originated in the eastern and central parts of the two Americas. They were cultivated by the Indians, and were found here in their gardens and fields by Europeans on the first settlement of the country. Pumpkins, or bell-shaped squashes (as New Englanders would now call them), were found as far north as Saco, by Champlain, in 1605 and 1606. A similar variety was cultivated by the Iroquois Indians, and still bears their name in France. Pumpkins were found by Raleigh's Colony among the Indians, in North Carolina, and by early voyagers in the West Indies. There are indigenous kinds in Brazil; and we have seen that even Patagonia has added another to the common stock. Cultivation has doubtless improved their qualities, and has caused them to sport in numerous varieties, so that it is now difficult, if not impossible, to determine which of the known kinds are typical species, and which are mere varieties.

A third group remains to be described. The representatives of it are the *Cucurbita Melopepo*, *verrucosa*, and *ovifera*, of Linnæus. It includes all those kinds called in New

England Summer Squashes, because they are eaten only during the summer, while they are soft and tender, and in an unripe state. These are the only two Squashes, if regard be had to the origin of the name, derived from the language of the Massachusetts Indians, by whom, according to Roger Williams, this kind of fruit was called "*Askutasquash*, which the English from them call *Squashes*." From the same authority, and from other sources, we learn that the Indians of New England cultivated this kind of fruit or vegetable, and used it for food; that some of their squashes were "of the bigness of apples, of several colors," while others are represented by Champlain, as being considerably larger, turbinated, and more or less puckered on the margin, and of the same form as that which in France is called *Bonnet de pretre*, probably the prototype of our Scalloped Squash, or *Cucurbita melopepo*. Bartram found a squash vine growing wild in the interior of East Florida, climbing to the tops of the trees, and bearing little yellow squashes of the form and size of an orange. Mr. Nuttall informs us, that the warted squash, *Cucurbita verrucosa*, was "cultivated by the Indians of the Missouri to its sources." It has generally been supposed, on the authority of Linnæus, that the Egg Squash, *Cucurbita ovifera*, was a native of Astrachan in Tartary. On turning to the account of it given by Dr. Lorche, from whom Linnæus received his specimens, I find it included in a list of plants, not natives of the vicinity of Astrachan, but cultivated only in gardens, where it is associated with such exotics as Indian corn or Maize, with which it was probably introduced directly or indirectly from America. We also learn from Lorche that this species varied in form, being sometimes pear-shaped; that it was sometimes variegated in color with green and white; and that the shell served instead of little boxes. Here we have plainly indicated the little gourd-like, hard-shelled, and variegated squashes, that are often cultivated as ornamental plants. For further account of the Squashes of the North American Indians, Wood's "New England Prospect," Josselyn's "Rarities," and Vander Donck's "Description of the New Netherlands," may be consulted. From these and similar authorities, we conclude that Summer Squashes were originally natives of America, where so many of them were found in use by the Indians, when the country began to be settled by Europeans.

The Summer Squashes, like the plants belonging to the second group, have acutely five-lobed, rough leaves, and large yellow flowers, a clavated five-angled and five-furrowed fruit stem, and a deciduous stile. Their seeds also resemble those of common pumpkins and winter squashes, but are smaller and thinner; some of them are runners and climbers, others have a dwarf erect habit, and hence are sometimes called "bush squashes." They differ from all the foregoing kinds in having when ripe a hard and woody rind or shell to the fruit, with a slimy and fibrous pulp, which when dry become a mere stringy and spongy mass. Hence, these fruits are only eaten while they still remain tender and succulent, and never in a ripe state. On account of their woody shells, they are sometimes mistaken for and miscalled *gourds*, from which they are not only distinguished by their oval and thin seeds, but by the largeness and yellow color of their flowers, those of gourds being smaller and white, and by their deeply lobed and rough leaves, those of gourds being entire, or at most only slightly angular and downy.

Under the name of *Cucurbita melopepo* is to be included what in New England is called Scalloped Squash, and in the Middle and Southern States, Cymlings; perhaps the Patty-Pan Squash is another synonym for the same. This *melopepo* is a very broad and thin or compressed fruit, with scallop edges, and more or less warted surface; it measures often ten or eleven inches in transverse diameter, and three to four from stem to blossom. It varies in form, being sometimes much thicker, and more or less turbinated or top shaped, when it takes the name of *Bonnet de pietre* or priest's cap; perhaps this is really its original form. Other varieties nearly round, are sometimes seen.

The *Cucurbita verrucosa* is the cucumber-shaped warted squash, generally with a slightly curved neck. In the West Indies there is a much larger, oblong, ovoid squash, with a somewhat warted surface, which is also referred to the *Cucurbita verrucosa*. Intermediate between these, there is another, which may be described as pestle-shaped, measuring ten inches or more in length, and quite smooth on the surface. These two kinds, namely the *Cucurbita melopepo* and *C. verrucosa*, with all their varieties, are generally of a dwarf habit, with erect stems.

Cucurbita óvifera, with its varieties *auriantiaca*, the Orange or Apple squash, and the *pyriformis* or pear-shaped and variegated squashes, has a running or climbing stem. Some of the orange squashes are the very best of the summer squashes for table use, far superior either to the scalloped or warted squashes.

The Vegetable Marrow, as it is called in England, has been considered by botanists as a variety of the *Cucurbita ovifera* of Linnæus; if this be correct, cultivation has forced it to a most unnatural size, and has greatly changed its original form. T. W. HARRIS.

Origin of Black Hawk.

MR. EDITOR:—I read in the last number of your valuable Journal, page 108, an article copied from the Boston Cultivator, headed the "Origin of Black Hawk," and without any intention to detract one jot or tittle from the just fame that "Black Hawk" and his progeny have acquired as roadsters, or caring whether Sherman Morgan, or Paddy, was his sire, I would like to know, and I think almost every person who is interested in breeding or using this high class of horses would like to know, from what stock they originally sprung. In the article referred to, the ancestors of Paddy are not mentioned at all, and all that is said about Sherman Morgan, is by Mr. Bellows, of Lancaster, N. H., owner of the horse at the time that his dam was bought by Mr. Sherman of Dr. Fiske, of Providence, R. I., and was said to have been imported; his sire, he says, was the Goss (or Justin) Morgan, brought to Randolph, by Col. Morgan. Now I think it will be easily seen that there is no information given to the public in this long article upon this all important subject. If Sherman Morgan horses and Paddy horses were produced as far back as 1811, by a certain valuable cross, and are valuable for certain purposes, let us know in what that cross was; then, by the same process they can be procured now. It is not enough to say that "the dam was imported," or that the "sire was brought to Vermont" by a Colonel or a General, to establish genealogy, without giving a full and satisfactory account from what country they were imported, from, and by whom, and of what stock they were, fully substantiated. If any of the gentlemen concerned in this article, are possessed of the true origin of Sherman Morgan, or Paddy, they will confer a favor by letting us have it.

I have another word to say in regard to this class of horses, which is this:—notwithstanding I have seen publications in different Agricultural Journals, respecting this same class of horses, I have not been informed as to what agricultural purposes they are adapted. Will some one please enlighten us upon this subject?

A SUBSCRIBER OF CHESTER CO., PA.

April 7th, 1855.

PENNSYLVANIA FARM JOURNAL.

VOLUME 5. PHILADELPHIA, JUNE, 1855. NUMBER 6.

Compost Heaps.

By Mr. John Lockhart Morton, Civil and Agricultural Engineer, Edinburgh.

We copy the following valuable article for making compost heaps from the Journal of the Highland Agricultural Society, of Scotland. Its importance will repay attentive perusal, and we think our readers will agree with us, that it alone when finished will be worth far more than a year's subscription to the Farm Journal. *Manure* is the foundation or basis of all good farming; it is the raw material from which the farmer manufactures his crops, and upon which he obtains his profits. Any information, therefore, how to increase the amount and quality of the manure heap, constitutes the very element of successful and remunerative labor. The article will be continued in another number:

"In the autumn of 1842, the thought first occurred to me that peat might be advantageously used in the preparation of compost heaps. I had previously seen it extensively employed in the bottoms of dunghills, but, from its being imperfectly dried, it did not appear to undergo the changes necessary to render it a manure. The summer and autumn of that year had been remarkable for drought; and even in October and November, clay land, which had been under green crop, was so dry and hard as to be almost incapable of being ploughed for wheat. This weather was in every respect favourable for drying, carting, and mixing peat in compost heaps. At the distance of two miles there was an extensive peat moss, easily accessible to carts, by barrows being used for 20 or 30 yards. From a heap which had been previously wheeled out to dry, consisting partly of black, solid peaty matter, and partly of floated moss, a large quantity was removed to pasture land, and laid down in heaps, each containing about three cart-loads. To each heap was next added a cart-load of lime-shells, and while quite hot these were mixed with the peat—care being taken to have the pieces of peat well broken, and to keep a sufficient coating of moss on the outside, to cover the lime properly. In the mixing operation, there was first formed a circular layer of peat several inches thick, and then over it was laid a thin coating of lime-shells, continuing in this way to add moss and lime alternately till the heap was completed in a rounded form. As the moisture in the peat acted on the caustic lime and produced a hydrate, a large amount of heat was generated. So hot indeed did the peat become, that it was impossible to hold the hand in it without being burned. This species of fermentation of necessity caused the moss to liberate a quantity of carbonic acid, which, being taken up by a part of the lime, converted it into a carbonate. The lime also united with the humic and ulmic acids of the peat, and formed humate and ulmate of lime, both valuable fetilizers. These chemical changes will explain the beneficial results which followed the application of the compost to the soil. After having lain for several months it was applied to stiff clay land, on which hitherto there had been very inferior crops. It was ploughed in with a shallow furrow early in Feburary, the land being sown soon after with oats, and in due time a heavy and remunerative crop was obtained. The following year it was under drilled beans; and, in contrast to a similar crop on land adjoining, naturally superior to it, the yield was worth nearly the double by the acre. For several years the land so treated produced remarkably productive crops; and as the quantity of lime applied per acre did not exceed five tons, it appeared conclusive that peat, when properly prepared, becomes a valuable manure, especially in clay soils, where its mechanical as well as its chemical action is of importance. The next trial with a peat compound, which appears to be worth mentioning—more for contrast than anything else—was made in 1850, with a potato crop. I only regret that the superiority of the peat mixture, for at least the first crop, was so conclusive to my own mind, that it did not appear necessary to test the respective crops by weight. In a large ditch, into which the gutter drainings of a considerable village are discharged, if has been customary for many years to saturate a quantity of dried peat, and by repeated turnings prepare it for use in the field. In 1850, a quantity of peat so prepared was used in the centre of a potato field, at the rate of about 30 tons to the acre. During the summer the foliage of the plants manured in this way was a much darker green in colour, and the stems were stronger than in other parts of the field. In autumn it was found that the tubers were numerous and large, but inferior for table use, though excellent for seed. In this case the yield from the peat-manured land was at least one-half larger than from the land dressed with farmyard manures. I found, however, that moss so *treated* is best adapted to a single crop, for unless very dry when first saturated, it does little more than act as an absorbent of the sewerage-water run over it. The action in this case, then, was altogether different from that of the lime compound. The preparation of the mixture, in the latter case necessarily brought about a reduction of the inert matter which the moss contained, and made it capable of nourishing plant life. In

the other instance, the peat acted mechanically, by keeping the soil open, and storing up the liquid with which it had been saturated; but beyond this it could not do much to promote vegetation. The great matter in using peat as manure is to put it through such a course of fermentation as will change its dead cold nature, and render it capable of again serving a purpose in the living world. Before being used in ordinary manure-heaps, it should be carefully dried, by being thinly spread during the summer months on the surface of some vacant space or in a pasture field. The lumps should be well broken down, and the first application of urine to the mass should only be sufficient to damp it. By this means fermentation will be produced, and as it progresses more liquid can be added.

Earth Composts:—Those composts in which soil and the mud of ponds are the predominating ingredients may be classed under this head. On every farm quantities of earth, road scrapings, ditch scourings, and similar substances are more or less available, and may be profitably employed for agricultural purposes. By the action of the plough on good soils, more or less earth is always being deposited on the turning-ridges. If this soil is allowed to accumulate for many years a much greater loss is entailed on the farmer than he may have any conception of. Take a head and foot ridge, each say 200 yards in length and 15 feet broad, with a depth of deposited soil of 15 inches, and we have 833⅓ square yards. Allowing that a field 200 yards broad has ridges 400 yards in length, it will contain 16 acres 2 rods 4 poles; and with the turning-ridges at each end covered with carried soil to the depth above mentioned, there will be sufficient earth to cover the whole surface of the field to the depth of nearly half an inch. This is no extreme example, for very often turning ridges are covered with a greater depth of carried soil than 15 inches, though the ridges are less than 400 yards in length. A top-dressing of good soil, half an inch thick, will often change the entire nature of a poor clay field and in any instance will make a great difference in the quality of land. In the winter of 1846, from the foot-ridge, of a field, of rich black soil, having considerable inclination of surface, I removed 500 cart-loads of earth little inferior in quality to some sorts of police manure. The field had lain in pasture for more than thirty years, having previously been regularly cultivated. The soil in the foot-ridge, being partly alluvial and partly plough-carried, had remained the whole time the field was in grass, and by long exclusion from the atmospheric action had become quite brown in colour. Here, then, were 500 carts of valuable soil locked up in a foot ridge for more than thirty years without doing almost any good to the farmer. A large portion of the earth so obtained was applied at once to the surface of a cold, thin, clay soil, and the great improvement which it made on the herbage clearly proved that the loss sustained by its long dormancy had been considerable. Had it been convenient at the time to have mixed the whole quantity with lime or other enriching substances, it would have been of still greater value even in proportion to the expense, but only a few loads could be so treated. In the autumn of 1849, however, I had a better opportunity of testing the advantages which may be derived from mixing soil with different kinds of manures. A sheet of policy ground, extending to about 60 acres, had been in pasture for many years, and for various reasons it was deemed expedient in 1849, to allow it to produce a crop of natural hay. To prevent the deterioration of the soil it was necessary, after the removal of the hay crop, to give a top-dressing of various sorts of composts. On thinking of the various substances which might be used to advantage, my attention was directed to a flat alluvial spot of ground in the centre of a plantation adjoining the land about to be top-dressed. A small run of water had formerly passed through the centre of this flat, and having periodically left deposits of rich soil, it had accumulated to the depth of about 4 feet. It was covered with half-grown hardwood trees, but as they were tolerably far apart, a great quantity of earth could be removed without disturbing the roots. On this natural store of fertility, men, horses and carts were at once set at work, and several hundred cart-loads were removed and laid down on the pleasure-grounds in heaps, each containing from eight to twelve carts. A large quantity of short manure (partially mixed with byre and stable dung), lime, and soot being procured, the heaps were prepared in the following manner:—In the manure compost, a layer of soil was laid in the bottom 6 or 8 inches thick, and over it was spread, quite loosely, a 6-inch coating of dung. With alternate quantities of earth and dung, the former about 9 and the latter about 6 inches thick, the heaps were drawn to a ridge like a narrow potato-pit.

The police manure, besides excrementitious matters, contained a great many undecomposed substances, such as straw, wood, shavings, rags, and parings of leather, and as soon as these were covered up with the moist soil, fermentation began. As the soil was mixed with grass, ferns, fibrous roots, and other matters, many of them quite inert, the fermentation also extended to it. In a few days, therefore, the heat of the mixture was by no means inconsiderable, and it was several weeks before it entirely cooled. In about three weeks after the formation of the heaps they were each turned over, and had a quantity of soot mixed with the compound. The turning operation was begun at the end of each heap, and while care was taken to mix the soil and dung thoroughly, no treading was allowed, for fear of pressing them too firmly together. As the material was being gradually turned over, the soot was mixed with it at the rate of about one cwt. to every five cart-loads. After being turned, a second heat came on, and continued for about a week; and in another week more it was in a fit state for being applied to the land. When the heaps were broken up, the earth, which had formerly been somewhat brown in colour, had become a rich black; and, judging by the greasy appearance of the mass, though it was comparatively destitute of smell, it appeared to be an excellent manure. It was applied at the rate of from 12 to 18 tons per acre, according to the state which the land was in. Taking 15 tons as an average, the cost per acre was as follows:—

Digging and carting ten loads of soil, .	£0	3	4
Five tons of police manure, including railway dues and cartages at 4s. 9d., .	1	3	9
Three cwt. soot, at 1s. 6d., . .	0	4	6
Mixing, turning, and carting out of heaps, &c.,	0	8	6
	£2	0	1

For this sum per acre a top-dressing was applied, which along with the lime composts, so much improved the pasture that the annual rental was subsequently raised 10 per cent. above its former letting price, and left at least 12 per cent. on the outlay. The dung used was in some respects suited to the land, which was rather stiff and tenacious; but on lighter land, byre or stable dung would have been preferable. The railway dues added as much to its price as would have been the case with better manure; and, therefore, though detailing the experiment as it was made, and the satisfactory results which followed it, I am convinced that had ordinary stable-manure been used, it would have been still more profitable. The fermentation was a principal agent in preparing both the soil and dung as a top-dressing compound, and stable-manure would have been even more profitable in promoting this. A large quantity of the soil so obtained was also used with caustic lime, the composts being prepared in the usual manner. The proportion of lime to earth was as one to four; and with the former mixed up in a hot state, an excellent compost was produced at an expense as under:—

Twelve tons soil, digging, and cartage,	£0 4 0
Three tons lime-shells, including railway dues and carting, at 11s. 6d., . .	1 14 6
Preparing, turning, and carting out the compound, ...	0 8 6
	£2 7 0

From the lime compound being used in the same enclosure with the dung mixture, it was scarcely possible to make actual experiments as to their comparative pasturing efficiency. So far, however, as careful observation of the appearances of the pasture for several years after can be depended on, the lime compost seemed to give the most satisfactory results. Immediately after the application of the composts in autumn, the dung and soot compound produced a dark green and seemingly nutritious herbage. In the following spring, to a rather less extent, this was also the case; but during the summer the sward did not appear to be so closely eaten as that which had been dressed with lime. For the first year the lime made but little apparent difference on the luxuriance of the herbage, but for two years past the pasture dressed with it has been darker green in colour, much less injured by moss, and more closely eaten than that dressed with the dung compost. Three tons of lime were no doubt a very light dressing per acre; but its beneficial action can be traced rather to the effect it had on the long-buried alluvial soil when thoroughly incorporated with it, than upon the mere surface of the land. The quick-lime mixed with the roots and grasses of the soil, and allowed to lie together sometime, promoted the decomposition of inert vegetable matter, and rendered it at once capable of nourishing living structures. Then again, on the compost being turned over once or twice, and subsequently spread on the surface, a small quantity of nitrate of lime would be formed—a susbtance eminently conducive to the growth of plants. Without entering into details of particular experiments recently made with composts, I purpose to make some further observations on the saving and use of the refuse substances generally available on ordinary farms. It may only be remarked that I speak from observation and experience, though the want of the requisite time and opportunities have prevented the making of experiments capable of being elaborately detailed.

Road Scrapings :—The cleanings of roads do not only contain excrementitious matter, but silica, potash, and mineral substances, required in the growth of plants, are also present. From the stones generally used on roads being of the trap-rock formation, the scrapings, of necessity, contain a considerable quantity of a mineral similar in many respects to lime. When applied to the land, therefore, the action is chemical as well as mechanical. On clayey soils road cleanings are of great use in rendering their texture more porous and less difficult to work. If the farmer is attentive to the gathering together of every description of road scrapings, and mixing them with slaughter-house or fish refuse, gas, liquor, or similar substances, a large quantity of most valuable manure will be obtained during the year, at a comparatively trifling expense. When blood, flesh or other animal substances are being decomposed, a large amount of nitrogen in the form of ammonia, and also some phosphates, are produced; and unless these be taken up by the materials with which such animal matters are surrounded, a serious loss must be the result. For such composts the cleanings of ditches, and other earthy matters can be more profitably used than any other ingredients. Often blood and other fleshy substances are thrown into the dunghills, but in this case a double loss is sustained. The rapid putrefaction of the animal matters promotes an injurious decomposition of the ordinary manure; and, on the other hand, the latter is ill adapted for taking up the liberated ammonia. All the earthy matters, then, which can be collected on the farm, ought to be stored up in heaps in the formation of which the different kinds of soil should be mixed together. Lying in this state for some time, and occasionally turned over, the mass will be improved even without the application of other ingredients; but the most profitable method of managing it is to employ such fertilizing matters as may be available in enriching the earth. When horses or cattle die, they are very frequently buried without any thought being taken of the value of the carcasses as a manure. Where such heaps of accumulated soil or road-scrapings are at hand, nothing will make better manure than the bodies of dead animals decomposed in the centre of the heaps. By the carcasses being cut up into pieces of suitable size, and thoroughly mixed with the earth, a soapy mass will be produced, remarkably potent as a manure. To promote decomposition, the heap may be turned over once or twice, and after the fleshy matter has been severed from the bones, the latter can be gathered together to be reduced in the bone mill. Taking the average weight of worn-out horses at 6 cwt., and the price they are sold at when sent to the dogs are 6s. each, we have a very valuable manure for 20s. a ton, besides allowing the skin to pay for the dissection of the carcass.

Surely this is cheap guano, even were it three times the price. Or taking the average weight of cattle dying from pleuro-pneumonia at 4 cwt., we may safely estimate that each carcass is worth 12s. as manure. If this is the case why is so little attention paid to the bodies of dead animals, that we should see them frequently buried 5 or

6 feet deep, or cast into some out-of-the-way pit, where they can serve no useful purpose whatever? Almost every farmer, it is to be feared, has now and then dead beasts about his place; and though the carcass should be that of any of the smallest domesticated animals, still, if converted into a manure, each one possesses a money value which should not be despised. Here, then, are two of the refuse matters of the farm which may be advantageously used together—(1), the cleanings of roads and ditches, available in almost every case, and (2), the carcasses of dead animals, obtainable in more cases than could be wished, both of them rendered of greater fertilizing value by being mixed together. But the refuse earthy matters of the farm are of use for many different sorts of composts; and, in our subsequent remarks on these, we shall use the term earth and soil as signifying such matters acting the part of absorbents in the preparation of the more potent fertilizers.

Report on Some of the Diseases and Insects Affecting Fruit Trees and Vines.

[Concluded from page 150.]

INSECTS OF THE GRAPE VINE:—The vine is subject to the attacks of a very great variety of insects, differing also from each other in their operations, and in the amount of injury done by them. Most of them have been noticed in my "Treatise" on injurious insects; but there are others claiming the attention of the cultivator and of the naturalist.

Grape Vine Borer:—The roots of cultivated grape vines in the Southern States have been observed, by Dr. F. J. Kron, of Albemarle, North Carolina, to be so much injured by borers as to prevent the ripening of the fruit, and finally to cause the decay and death of the vines. The insects do not even spare the native varieties, all of which, except only the *scuppernong* or *muscadine*, are found to be attacked by them. Taking advantage of the foregoing exemption, Dr. Kron, has been successfully engrafting and cultivating the best foreign and native grapes on stocks of the wild muscadine, probably the true *Vitis Vulpina* of Linnæus, and of Sir J. E. Smith, in Abbot's "Insects of Georgia," and identical with the *Vitis rotundifolia*, of Michaux and of Elliott. He has also favored me with samples of injured vine-roots, and specimens of the insects in all their stages, together with an account of his observations and experiments upon them. This account, and a scientific description of the insects written by me at the request of Dr. Kron, have been published in the Raleigh Register for the 5th of April, 1854. The insects belong to the genus *Ægeria*, and are allied to the borers of the peach tree, and to those that destroy the roots of pumpkin and squash vines. In their winged form they strikingly resemble certain wasps called *Polistes*; hence I have given to this species the name of *Ægeria polistiformis*. According to Dr. Kron, they are found about the vines, and on the wing from the middle of June to the middle of September, during which time they couple and lay their eggs. These winged insects are of a dark brown color, more or less tinged with a tawny orange on the sides, and banded with bright yellow upon the edge of the second ring of the hind-body. The thorax and shoulder-covers, and the fourth ring, are more faintly edged with yellow or with tawny orange. The feelers, antennæ beneath, and legs are also orange colored. The fore-wings are dusky; the hind-wings are transparent, but veined and edged with black. The female has a little orange colored tuft on each side of the tail, and the males have two tufts on each side, the middle pair longer than the others. The males are more numerous, more active, and smaller than the females; they measure from five to six-tenths of an inch in length, and their wings expand from one inch to one inch and three-twentieths. The body of the female varies from six to nine-tenths of an inch in length, and her wings expand from one inch to one inch and a half. These insects lay their eggs near the roots of the vines, and the whitish grubs, hatched therefrom, of various sizes will be found boring into the bark and wood of the roots during the summer. When fully grown, these grubs measure from one inch to one inch and three quarters in length. They undergo their transformations in oblong oval pods, formed of a gummy kind of silk, covered with fragments of wood, bark and dirt, which will be found within or adjacent to the injured roots. The insects take the chrysalis form at various times during the summer. The rings of the chrysalis are surrounded with minute teeth, which assist the insect in coming forth from its pod or cocoon when about to be changed to a moth.

Eight-spotted Sphinx, or Alypia octomaculata:—There are two insects occasionally found on the grape vine, which in their caterpillar state closely resemble each other in form, size, color and habits. One of these is the beautiful *Eudryas*, described in my "Treatise;" the other is the *Sphinx* or *Alypia*, above named. This *Alypia*, though common and occasionally so numerous as to be quite hurtful to the vine in some parts of the United States, is very rare in New England. I never saw it in Massachusetts until the summer of 1853, when a few specimens were discovered on my grape vines; and during the past summer they have appeared in greater numbers on the same vines. At first they were mistaken for the caterpillars of the *Eudryas*, from which, however, they are to be distinguished by having a conspicuous white spot on each side of the hinder part of the body. These caterpillars are white, passing into blue, transversely banded with narrow black lines, with a broader orange colored band, dotted with black on the middle of each ring. The head and feet are also orange, dotted with black. The black dots on the body produce a few short whitish hairs. They were found eating the leaves of the vine in the latter part of June and beginning of July. Full grown specimens measured one inch and a quarter, or more, in length. Before the 16th of July, they left the vines, and concealed themselves in a loose web upon the surface of the ground, and soon took the chrysalis form. One of them was transformed to a moth on the 10th of August; others remained in the chrysalis state through the winter and came forth winged in May and June. The winged insects are black, with two large yellow spots on each of the fore-wings and two white ones on the hind-wings. Their shanks are clothed with orange-colored hairs. Their wings expand from one inch to one inch and a half. Abbot has figured this insect in his "Insect of Georgia;" but has colored the caterpillar incorrectly.

Grape-vine Flea-beetle, or Haltica:—The depredations of

this insect upon the grape vine seem first to have been observed in the year 1831, by the late Judge Darling, in Connecticut, and by Mr. David Thomas, of New York. An account of them by the latter gentleman was published in 1834, in the 26th volume of Silliman's "American Journal of Science." The beetles were found to destroy the fruit buds in the spring, and their young, in the form of chestnut colored grubs, destroyed the leaves in summer. These grubs have never been fully described. In a recent excursion to New Hampshire, I was struck by the condition of the leaves of the black alders (*Alnus serrulata,*) which, through a long extent of country, were destroyed in the same way as the leaves of fruit trees are by canker-worms. Upon examination, the authors of all this mischief were found to be certain dark colored grubs, great numbers of which were still remaining on the leaves on the 2d of August, while others had already completed their transformations, and had come forth in the beetle form. The beetles were identical with the above named depredator of the grape vine, and feeding on the few green leaves still remaining on the alders. The grubs were fully grown, and measured about half an inch in length. They were of a livid brown color above, and paler beneath, with a black head, black feet, and a double row of minute accuminated black warts, each producing a very short hair, on every ring. The body was nearly cylindrical; the feet were six in number, situated beneath the fore part of the body; and there was a little fleshy prop-leg beneath the last segment. It may be added that the beetles were rather more than three-twentieths of an inch in length, of a brilliant greenish blue color above, and that they leaped with the agility of fleas. The discovery of these insects in such immense numbers on the the extensive alder, and ravages committed by them on this shrub, seem to indicate that the natural food of this species is obtained from the alder, rather than from the vine; and that its resorting occasionally to the latter, may be owing to the want of the former, or to the extraordinary multiplication of the insects, in certain seasons, in the vicinity of the grape vine.

Cambridge, Mass., Sept. 5, 1854.

What a Mechanic can do on a Farm.

You or a correspondent asked, in a former number, "What a man can do in Virginia." I will tell you what I have done, not by way of boasting, but to answer the question, and perhaps encourage others.

I was born and raised in this county, and never had any education more than to read and write. I was bound to a trade when young, and after I was free, lived on a farm, and received $140 a year. When I was twenty-four years old I married, neither my wife nor myself having any property. We are now worth $10,000, obtained without any speculation, and in a straightforward course. I have been married about twenty years. work a farm of 238 acres, which I bought some years ago, for $22 per acre. Last year I had 24 acres in wheat, yielding 470 bushels—63½ lbs. to the bushel. I raised 2,500 bushels of corn, which is only worth, at this time, 65 cents per bushel. My sales this year will amount to about $1,800, including pork, grain, hay, &c. I plowed an old and very poor field, last year, for corn, having spread over the ground lightly with straw, and sowing 150 lbs. guano to the acre. I mixed the straw and guano together, and raised 50 bushels of corn to the acre, working the land with a cultivator.—*American Agriculturist.*

Rotation of Crops.

Although instances are frequently cited, of certain plants being raised on particular spots of ground for year after year, without any apparent diminution in the produce, yet it is generally allowed that a rotation of crops is always of advantage, and often of the greatest importance. We consider it as necessary as depth and mellowness of soil, and the regular application of manure. Gardeners are sometimes heard to complain of vegetables becoming "tired" of the ground where they have been long cultivated, They are attacked by numerous diseases and insects, while a deficiency is to be discovered in the amount of the produce. As soon as this is known some wiseacres will send many miles, in order to procure new varieties of seed, because the old ones have "degenerated."

A more certain method of relief would be to adopt a good rotation of crops, which is based on the well known fact, that the several families of plants not only strike their roots in different depths and in different directions, but draw different kinds of nourishment from the soil. When one particular element of a vegetable is removed from the soil, the vegetable cannot again be raised there, until that element be restored. It is, therefore, advisable to alternate the crops, by which means the land will have opportunity to regain its original strength and fertility. This is illustrated by Dame Nature herself. If old pastures were to be attentively observed it would be found that the grasses gradually change from season to season; and in wood-land, it would be discovered, that an entirely different kind of tree takes the place of such as have decayed, or have been cut down. Thus the pine and others of the coniferæ will succeed the oak, the chestnut and other deciduous trees.

A rotation is designed to prevent a too frequent recurrence of the same species upon a particular spot. Some authors lay down regular plans for the guidance of their readers; but as the space annually appropriated to different plants depends upon circumstances, it will be readily seen that all such courses or plans are difficult of application. Instead, therefore, of following this practice, we shall content ourselves with some general rules, which possess the merits of simplicity and briefness, so that the reader can adapt them to his own wants.

In the first place, vegetables of the same species shall not follow each other, but return at as distant intervals as the case will allow. Tuberous or tap roots should be succeeded by those of a fibrous character; perennials by annuals; and plants of a dry, solid texture, or those left for seed, by such as are succulent and juicy. Ground which has necessarily been devoted for a number of years to the artichoke, asparagus, rhubarb, strawberry, and the like, should, as soon as they are removed to other parts of the enclosure, be subjected to a strict rotation, and allowed to recover those elements of fertility of which it has been exhausted. Where the garden is divided into quarters, the vegetables can easily be made to take a circuit in every four or eight years.

A little reflection will satisfy the intelligent reader, that by observing an alternation of crops, digging his soil to a proper depth, and manuring it abundantly, he need have no fear of its losing its fertility, or of his choice vegetables degenerating.—*Schenck's Garden Text Book.*

Transplanting Trees—Large and Small.

A friend was recently complaining to us of his bad success in moving ornamental trees into his lawn, and asked us to account for it. Out of over two hundred, transplanted within the last two years, hardly six thrifty ones were now alive. He had gone to extraordinary expense in digging very large holes, obtaining rich surface soil, watered them with great labor, staked and tended and mulched them, and yet they died. Our enquiries elicited the *secret of failure*, viz: that he had gone to the *woods or clearing*, for all the large and beautiful specimens he could find, both of evergreen and deciduous trees, thinking it unnecessary to go twenty miles to a nursery, when better looking trees were growing close by.

In our short experience we have often had occasion to remark, to use a common expression, "there is a trade in everything." There is an art, or science in every human occupation, within the sphere of which only we must expect to find that accurate knowledge of details so essential to success. It is perhaps as unreasonable to expect a citizen unaccustomed to the philosophy of planting trees and to country life to understand it, as it would be to expect a farmer to be posted up about the rise and fall of "the funds," and the variations of the cotton market. The reason trees from the woods do not succeed is, because they have never been before transplanted; in other words they are deficient in fibrous roots around the body of the tree. In their native locality, their fibres, containing the little spongioles or mouths through which food only is absorbed, exist at the extremities of the *long roots.* As it is almost impossible to take these all up, the very source of supply and support is cut off, and if the tree should be able to barely live, it will be years before *new organs* for supplying food can be re-formed. No matter how rich and abundant the soil may be in the elements of growth, there is but this one way provided by nature for them to be absorbed. In nursery practice, where trees are taken from their natural localities, they are removed *quite small*, and even then probably the loss is fifty per cent., and much more with many varieties. A small sized tree of one or two feet high can, of course, be taken up with much less loss of fibre than a large one; the main roots being cut off there is an amount of fibrous root remaining, which enables them to recover speedily from the check to its growth and change of circumstances, and develope fresh organs of nutrition. Every subsequent transplanting, and it has to undergo two or three before final removal to its place in the row for sale as a tree, increases the formation of fibrous roots and its probabilities of success when finally transplanted. Frequent removal of trees and shrubs is therefore practiced in all good nurseries for this object.

A mistake we think is often made by purchasers in seeking for very large trees, even from the nurseries, in the wish to procure fruit or shade without delay. We are satisfied nothing is gained by it. A *large tree* transplanted in the ordinary way may, and does often *barely* live for years afterwards. It cannot grow and thrive till thoroughly recovered from the necessarily great and violent interruption of its functions and organs of growth and nutrition. It becomes effectually stunted, while a small or young tree will hardly know the change, if proper care is taken, and will continue *growing* and thriving.

The only effectual way to transplant large trees is by the frozen ball method in the winter season.

Natural History of New York, Vol. V.

BY E. EMMONS, M. D.

Our last number contained a very able criticism on the above volume, from one of our valued correspondents, and an experienced entomologist. The many gross errors and absudities, which he has pointed out, and which have also been extensively criticised in the Progressive Farmer and Philadelphia Florist, admit neither of denial nor extenuation. They are matters of fact, too gross and palpable to pass unnoticed, and we sincerely hope for the credit of the great State of New York, and the scientific reputation of the whole country, the edition of the fifth volume, no matter what the cost may have been, may be speedily *called in and cancelled.* The plagiarisms of the work are discreditable in the highest degree to the author, E. Emmons, Jr., and the many inaccuracies are so palpable as to be almost ludicrous. Whatever *his* ambition has been heretofore, his highest *now* should be that the very *memory* of his attempt to illustrate our local entomology should be forgotten, and not go down to posterity. Were we in his situation, we should prefer to sink a private fortune, if necessary, in the attempt to destroy all traces of the fifth volume of the Natural History of New York. It would occupy our thoughts by day and our dreams by night, and we would take no rest till it was a thing accomplished. We should then feel safe, at least, in preserving our name from the indignant censure of the future, and by going into retirement ten years *now* should hope to escape the recollection of the fifth volume even by the present generation.

The Coming Crop in Western Pennsylvania.

A friend from the western part of the State writes as follows:—"The crops in this region all look well, *very well;* and every farmer here has put in an extra acre, and still the work goes on, for they are still plowing for a little corn. The grass never looked better at this season, and the clover that escaped the drouth of last summer looks very well. With us there has been no clover fields frozen out, the only damage they sustained was from dry weather and not from frost. The excessive cold and deep snows of the last winter have made fine clover."

Raising Calves on Sour Milk.

An article appeared in a recent Boston Cultivator on raising calves, and as we see the *process* copied into several of our agricultural exchanges, we call attention to the subject chiefly for the benefit of our readers who are not *practical farmers.* The latter will place a proper estimate on this *improved patent process* for raising calves. The writer recommends one-half new milk the first month, one-fourth new milk the second, and after

that "sour milk, hay, and a few oats." The writer thinks the alteration from sweet milk to sour is *very important*, "to be made while the calf is drinking," and after he has been" *used* to drinking *sour* milk, he will not touch *sweet*." *Very likely*, and for the same reason, a horse fed for a couple of months on oyster-shells and watermelon rinds will not be in a condition to touch oats. When the calf scours, (as he most certainly will,) it is recommended to give it one or two doses of *opium*, as a certain cure. Sour milk, whole oats and opium for calves!! It would be rather a ludicrous picture to see two persons feeding a calf on this plan, for it would require two, one to hold the sour milk and pour it slily into the sweet milk while it was drinking, so as to convey the impression to the *calf's mind* that it had only got sweet milk, for the virtue of the process would seem to consist in the calf's *not knowing* the sour had been put in. Whether the calf's stomach would not be likely to discover the imposition is not stated by this learned writer, but in such an event, no doubt the opium could correct any unpleasant consequences, and soon put the calf to sleep.

Seriously, we regret to see such matter in an agricultural paper, and are reminded of the remark of an old farmer, that only experienced and practical farmers could safely subscribe for agricultural periodicals, "as they alone know how to sift the wheat from the chaff." We venture to say that a calf kept above ground for two or three months on such a system, would not at the end of that time cast a shadow.

For very valuable and high prieed stock, where the expense would be fully justified, there is no plan for raising a good calf equal to buying a common cow, and let it run with her and suck at pleasure. The cow can be turned off for beef in the fall, when the calf will have a size, strength and maturity, ready for the coming winter, unattainable by any other process. In ordinary cases calves can be raised well, by taking them from the cow at two or three days old, or so soon as the inflamation of the cow's bag is reduced, feeding them on fresh new milk for the first month, with a trough at hand containing a little meal to lick at pleasure, and which, with a little help at first it will soon learn to like. For the second month it should have, at least, sweet skimmed milk, access to some corn and oats ground, or meal and bran, and soft hay, to be continued afterwards according to circumstances. The calf suckler, described on another page, will be found a useful and convenient auxiliary. In addition to the above, a piece of soft pasture, and pure water should be allowed at all times, as nature herself suggests. Calves should be very early accustomed to the halter. We have always tied up our young calves at night in the stalls; and find the subjection when young has the effect of making them more quiet and tractable ever afterwards.

Domestic Recipes.

Red Flummery:—Boil a pound of ground rice in as much water as will cover it. When it is thoroughly boiled and very thick and smooth, stir into the rice (while hot) a half pound of powdered white sugar, and about three gills, or six wine-glasses of fresh currant or cherry juice that has been passed through a linen bag. Next replace it on the fire, and boil the whole together for about ten minutes, stirring it well. Then put it into moulds, and set it on ice. When cold turn it out and eat it with sweetened cream, or with boiled custard.

You may use the juice of fresh strawberries or raspberries, stirred in while the flummery is hot, but not boiled afterwards. The flavour of strawberries and raspberries is always impaired and weakened by cooking.

Rye Mush:—To make smooth rye mush, sift a quart or more of rye meal into a pan, and gradually pour in sufficient cold water to make a thick batter, stirring it hard with a spoon as you proceed, and carefully pressing out all the lumps against the side of the pan. Add a very little salt. The batter must be so thick at the last that you can scarcely stir it. Then thin it with a little more water and see that it is quite smooth. Rye, and also wheat flour, have a disposition to be more lumpy than corn meal, when made into mush. When thoroughly mixed and stirred, put it in a pot, place it over the fire and boil it well, stirring it with a mush-stick till it comes to a hard boil; then place it in a diminished heat, and simmer it slowly till you want to dish it up. Eat it warm with butter and molasses, or with sweet milk or fresh buttermilk. Rye mush is considered very wholesome, particularly in cases of dyspepsia.

French Icing for Cakes:—Dissolve some fine white gum Arabic (finely powdered) in rose water. The proportions should be, as much gum Arabic powder as will lie on a ten-cent piece to a tea-spoonful of rose-water. Beat some white of eggs to a stiff froth that will stand alone. Stir in gradually, sufficient double refined powdered loaf-sugar to make it very thick, (a good proportion is four ounces of sugar to the white of one egg,) add to this quantity a tea-spoonful of the rose-water with the gum arabic dissolved in it, and beat the whole very hard. Instead of rose-water you may dissolve the gum in fresh lemon-juice. Previous to icing the cake, dredge it with flour, and in a few minutes wipe it off with a clean towel. This, by removing the greasiness of the outside, will make the icing stick on the better. Heap the icing first on the middle of the top of the cake; then with a broad bladed knife spread it evenly all over the surface. Dip the knife frequently in a bowl of cold water as you proceed, and smooth the icing well. If not thick enough, wait till it dries, and then add a second coat.

Bread Muffins:—Take four slices of stale light bread, and cut off all the crust Lay them in a pan, and pour boiling water over them; but barely enough to soak them well. Cover the bread, and after it has stood an hour, drain off the water, and stir the soaked bread till it is a smooth mass; then mix in two table-spoonfuls of sifted flour, and a half pint of milk. Having beaten two eggs very light, stir them, gradually, into the mixture. Grease some muffin rings, set them on a hot griddle, and pour into each a portion of the mixture. Bake them brown; send them to table hot; pull them open with your fingers, and spread on butter. They will be found an excellent sort of muffin; very light and nice.

Strawberry Cakes:—Sift a small quart of flour into a pan, and cut up among it a half pound of the best fresh butter: or mix in a pint of butter if it is soft enough to measure in that manner. Rub with your hands the butter into the flour, till the whole is crumbled fine. Beat three eggs very light; and then mix them three table-

spoonfuls of powdered loaf-sugar. Wet the flour and butter with the beaten egg and sugar, so as to form a dough. If you find it too stiff, add a little cold water. Knead the dough till it quits your hands, and leaves them clean. Spread some flour on your paste board, and roll out the dough into a rather thick sheet. Cut it into round cakes with the edge of a tumbler or something similar; dipping the cutter frequently into flour to prevent its sticking. Butter some large square iron pans or baking sheets. Lay the cakes in, not too close to each other. Set them in a brisk oven and bake them light brown. Have ready a sufficient quantity of ripe strawberries, mashed and made very sweet with powdered white sugar. Reserve some of your finest strawberries whole. When the cakes are cool split them, place them on flat dishes, and cover the bottom piece of each with mashed strawberry, put on thickly. Then lay on the top pieces, pressing them down. Have ready some icing, and spread it thickly over the top and down the sides of each cake, so as to enclose both the upper and lower pieces. Before the icing has quite dried, ornament the top of every cake with the whole strawberries, a large one in the centre, and the smaller ones placed round in a close circle.

These are delicious and beautiful cakes if properly made. The strawberries, not being cooked, will retain all their natural flavour. Instead of strawberries you may use raspberries. The large white or buff-colored raspberry is the finest, if to be eaten uncooked.

WASHING SILVER WARE:—A correspondent of the Germantown Telegraph says:

Some thirty years since I was informed by a proprietor of one of the largest and oldest silver establishments in the city of Philadelphia, that "housekeepers ruined their silver by washing it in soap suds; it makes it look like pewter; never put a particle of soap about your silver, then it will retain its original lustre; when it wants polishing take a piece of soft leather and whiting, and rub it hard." I had formerly seen silver washed in water with the addition of a little soap and rinsed in clear water.

I adhered strictly to his advice, and found a great difference in the appearance of the silver.

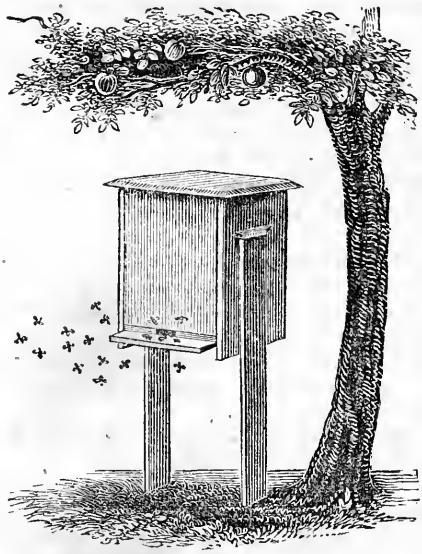
Leibig's New Work.

A new treatise on the relations of Chemistry to Agriculture by Justus Leibig, has been issued from the press, which will attract general attention. The subject matter has especial reference to the celebrated experiments of J. B. Lawes, of Rothamsted, which it is contended, overthrew the so called mineral theory of Leibig, but which the latter says in the present edition, "he considers as the firmest supporter of the theory which they were originally intended to combat."

He subjects these experiments to close examination, and lays down some general propositions, elucidating his own views of the true scientific principles of culture. The price is only twenty-five cents, and it is put up in a form for mailing.

Labels of Fruit Trees.

After a trial of some years, we can confidently recommend the following composition as making an indelible marking ink on zinc for trees. Let strips of zinc, half an inch wide and perfectly bright, of any suitable length be procured, punch a hole in one end, and suspend by copper wire to the branch of a tree, with the name written on, and it will remain for many years indicating at all times the name, and preventing much of the confusion so prevalent in nomenclature of fruits. It should be written with a quill pen, and always shaken before using. Take one drachm Verdigris, one drachm Sal amnionia powder and half a drachm of Lamp black, and mix with ten drachms of water.



THE

PROTECTIVE BEE-HIVE.

Among the many Bee Hives for which patents have been obtained, the above deserves attention. The patentee thus describes it:

1. This Hive furnishes, as its name indicates, *protection* against the encroachments of the Bee-Moth. This is effected in a manner, and upon a principle entirely new. No cage, trap, or decoy, is constructed for the Bee-Moth. In a peculiar manner *the animal heat naturally emanating from the bees is intercepted*, and in this way the deposits and hatching of the eggs of the miller is prevented. As to the real value of this arrangement or protection, no comments are needed. 2. It is easily ventilated in summer and winter. 3. It provides for the deposit and removal of surplus honey without a *destruction of the bees.* 4. The work and condition of the bees can be readily inspected. 5. It is a Hive of *great durability.* 6. It prevents the bees from clustering upon the outside of the hive. 7. In it bees are fed without inviting robbers from other hives. 8. It affords ample room to prevent the bees from swarming, when required. 9. It is easily cleared of dead bees and every offending substance. 10. This hive is made for exposure to the weather, answering the purpose of *hive* and *house*, and on this account is the *cheapest* hive which can be used. 11. It dispenses with a Bee-House, which affords a shelter for all kinds of insects. Its location is in the open

air and *shade*, as here represented. 12. Bees are easily and safely transferred from the ordinary Box-Hive to this. Such are some of its more important characteristics These are given that individuals at a distance may form some idea of its utility. As to its practical operations, some idea may be gained from the following statement of facts. Two years ago, in consequence of removing from a neighboring State, the subscriber commenced with a new stock of bees. Recently he has taken an account of expenditures and receipts in Bee-keeping for two years, and finds that his bees have paid in honey, and increase of stock, six hundred and fifty-four per cent., or three hundred and twenty-seven per cent. per annum. This is the average of his entire stock, which is now somewhat extensive. Some swarms have paid one hundred, others three hundred, others five hundred per cent a year. Other Bee-keepers who have used this hive have been equally successful. The subscriber would be glad to give one individual who has used it $25 for the proceeds of one swarm during a single year. In this hive the natural instincts of the Honey-bee are not obstructed or changed, but directed into a profitable channel for the benefit of the keeper.

The Patentee of this hive is the author of a work entitled; EDDY ON BEE CULTURE. This manual will be sent free of postage to any individual who shall forward to him nine letter stamps. His address is—Henry Eddy, M. D., North Bridgewater, Mass.

Pennsylvania State Agricultural Exhibition.

Harrisburg has been selected by the Executive Committee of the State Society, as the place for holding its next annual exhibition, and the necessary funds having also since been raised by its citizens, we are now able to give notice of it as a fixed fact. We have no doubt the selection will be generally approved of, its central position, and facilities of access from all parts of the State, entitling it to preference, inasmuch as both extremities, Philadelphia and Pittsburg, have each had the benefit of one location of the fair. Judge Watts has accepted the invitation to deliver the address. We anticipate a display at least fully equal to any preceding one, and hope every farmer will consider it his duty to do *something*, by either personal effort, or contribution, to sustain the character and increase the interest of the exhibition. Ample facilities will no doubt be afforded by the various rail road companies in transporting stock, implements, &c., of which we will give due notice.

The time of holding, with the premium list, will be found on another page.

Early Tomatoes.

There are some general principles, which lie at the basis both of good farming and gardening, and which are applicable to growing with success an oak tree, as well as a tomato. Frequent transplanting makes *fibre* either in the roots of a tree or vegetable here, and is both the secret of getting trees to grow and having early tomatoes. Our Tomato Plants, at the time of this writing (middle of last month) *are eighteen inches high, stout, thickly branched* all around, with a hard, not succulent stem, and out in blossom. In a few days we shall back up a cart to where they are growing, dig them up with a spade, and enough earth and roots adhering to each one, as would go in a quarter peck measure, fling them into the cart, and plant them out either on a clear or cloudy day, as it may happen, and not expect a leaf or blossom to hardly droop its head or wither. The reason is, they will have been *thriee transplanted*. First sown thickly in the frame, then pricked out into rows, afterwards as they increase in size, transplanted into other rows, wider apart and where they would *have plenty of room* in rich soil to expand and grow before the last removal. The consequence is they acquire a mass of fibrous roots, the very life of the plant, to which the earth adheres, and the stem acquires a firmness, not easily affected by the weather. This is of course done in frames under glass, which are raised from time to time as the height of the plants may require, and to give them room. In this way we have tomatoes about two weeks before our neighbors.

What is Poudrette?

As this article is becoming quite common in market, as a manure, a short history of it may be interesting.

In large cities, like London, Paris, and New York, an immense amount of filth accumulates in privies, and other places which it is necessary to remove. To do so required great expense, and to remunerate in part the person who did this unpleasant work, they adopted the practice of selling it to farmers, for manure. The first systematic effort to save it for market, we believe, was in London. The sewers were so constructed, that the accumulated filth of the city was emptied into them, and through them carried in a liquid state, into large reservoirs on the Thames. By means of steam power it was then forced through large iron pipes back into the country, and sold to the farmers. This liquid manure, though in the best possible state for use, was necessarily confined to a limited sphere near the city, and besides, was most offensive in odor. The great desideratum was to neutralize the odors without impairing the fertilizing properties, and render it suitable for exporting to a distance. To do this it is mixed with ashes, or muck, and plaster—the first to absorb the water, diffuse the concentrated strength and render it better adapted to sow over the ground; the plaster to neutralize the odor, and also to detain the nitrogen and ammonia. When so mixed, it is dried, pulverized and barrelled up for use.

In New York, the sweepings of the streets are gathered in large piles and sold, but are not as valuable as the prepared Poudrette. This last article sells at about $2,00 a barrel. When genuine, it is the most concentrated and powerful fertilizer known. To be a genuine article, however, no more ashes, muck or plaster should be used than is necessary to render it dry, and fit it for barreling, and destroy the offensive odor. Counterfeit Poudrette has been manufactured of appearance so like the genuine, as to escape the detection of any test, except a chemical analysis, and yet almost totally worthless. Like guano, it is valuable in proportion to the nitrogen contained in it. If, by exposure, it has lost that, or from the amount of worthless articles in its composition, never had any, money is thrown away in purchasing this far famed manure. Farmers should be cautious of whom they buy, unless the article is tested by a chemist.—*Ohio Farmer.*

Debates of the American Pomological Society.

The proceedings of the third biennial meeting of the American Pomological Society, held last fall in the city of Boston, were duly published some months since in pamphlet form, and contain much valuable information to the farmer and fruit grower. The essays in two of our recent numbers on the diseases and insects affecting fruit trees and vines, by T. W. Harris, were extracted from its pages, and we now give, from the discussions on fruit, the following relative to varieties *known in Pennsylvania*, excepting the apple, chiefly by reputation. The decisions elicited by these discussions are reliable and useful, embodying as they do the long experience and experiments of the best Pomologists in the country:

THE LAWRENCE PEAR:—Mr. Walker of Massachusetts. This pear, in my estimation, is one of the greatest acquisitions to the list of pears. I know of no winter pear, taking all in all, that is equal to the Lawrence. I think it will not be going too far, when I say that the time will come when the Lawrence pear will be as eagerly sought after in the markets as the old St. Michael was. There are other qualifications, also, to be borne in mind. In the first place, the tree is a thrifty one; it has an abundance of foliage, and holds it until the frost comes. There is another property peculiar to the Lawrence. The fruit clings to the branches as though it had been tied on, reminding one of the Urbaniste in that particular. He desired that an expression may go out from this society that the Lawrence pear is among the very best; and, probably, *the* best of the late varieties of pears.

Mr. Prince of Long Island. I would remark that it is one of the most vigorous trees; it is invaluable on that account; is always perfect, and is long keeping. I think it so invaluable a fruit, that the time will arrive when it will hold the same position for exportation, the Baldwin apple does.

Mr. Manning of Massachusetts. Before the question is put on the Lawrence pear, I wish to say that I have known it for some twelve years, and from my own experience consider it the most valuable late pear that has been introduced within that time. It is hardy; its flavor is excellent; and I scarcely know of any point in which it is deficient.

Mr. Hayes of New Jersey. It originated on a light sandy loam; and I should like to know if it will grow on a heavy clay soil.

The President. It will; and I wish to confirm the favorable opinion that has been expressed concerning it. It is one of the most valuable that has been cultivated. It is so valuable that Mr. Cushing, of Waterton, has grafted over a great number of trees with it,—so many that he found it difficult to obtain scions to do the work with.

The Lawrence pear was unanimously recommended for general cultivation.

It was here voted, on motion of Mr. Hancock, that it should require a vote of two-thirds of the members present, to place any fruit on the list for general cultivation; and where much difference of opinion existed, that the number of votes for and against the recommendation be registered in the records of the society.

MANNING'S ELIZABETH was next discussed. H. W. S. Cleveland of New Jersey. I desire to give my testimony in favor of this pear. I have fruited it for six or seven years, and have always found it of very fine flavor; always selling very readily, and a very hardy, vigorous tree. I recommend it, without hesitation, for general cultivation.

Mr. Cabot of Massachusetts. I recommend it for general cultivation. It is a very good pear, and good bearer, though it is rather small.

Mr. Hancock of New Jersey. I have had it about ten years, and have universally found it good. For the last two years I have considered it the best pear of the season we have in New Jersey.

Mr. Manice of New York. It is very fine, very productive, and very handsome.

It was unanimously voted to place this pear on the list for general cultivation.

THE JEFFERIS APPLE:—Dr. Eshleman of Pennsylvania. I would recommend that the Jefferis be put on the list for trial. I have eaten it at our Society's Exhibition for three successive years, and consider it the best apple of its season that I have ever seen.

Mr. Baldwin of Pennsylvania. I have seen it for several years. It has always been considered the finest apple of its season, which we have had at our society.

Mr. Hancock of New Jersey. It is the best seedling apple I have seen for a number of years. I consider it No. 1. It is ripe during the latter part of this month [September] and the early part of October.

Mr. Hooker of New York. That apple has been shown at the exhibitions of Chester County for three or four years, and has universally been pronounced *best*.

It was unanimously voted to place it on the list of those varieties which *promise well*.

BLACKBERRIES:—Mr. Cabot of Massachusetts. I wish to enquire about Lawton's New Rochelle Blackberry. I have seen something of it, and it seems to me a very good one.

Mr. Prince of New York. It is the most remarkable acquisition of the blackberry kind; very sweet and delicious indeed, a great bearer, and the hardiest plant possible. They are planting it extensively.

Mr. Manice of New York. It is very large, tender, and delicious. I think it the greatest acquisition we have had.

Mr. Saul of New York. I can corroborate what others have said. Mr. Charles Downing made a special journey to New Rochelle to see this blackberry, and found three acres covered with it. He said it was the greatest sight he ever beheld, and entirely exceeded his expectations. The bushes were completely loaded with fruit, and he thought it a great acquisition.

Mr. Clark of Connecticut. I never saw any thing more productive. Adopted as *promising well*.

Mr. Prince of Long Island. I wish to ask whether gentlemen know any thing of Needham's White Blackberry.

Mr. Manning of Massachusetts. I have had it on my grounds, and think it a very valuable variety, though not so much so as the Black.

Mr. Cabot of Massachusetts. I have seen it repeatedly and supposed it an accidental seedling. I should hardly think it worth notice.

Mr. Prince of Long Island. It is found plentifully in Vermont and Ohio. I have tried it, and found it very unproductive.

Mr. Cutter of New Hampshire. With me it is perfectly worthless.

Mr. Walker of Massachusetts. This White Blackberry is a very miserable affair, and I think the less we say of it in our publication the better. I move we close the discussion on this subject. The motion was adopted.

Italian Rye-Grass,

The following is taken from the Genesee Farmer:—"We consider the Italian Rye-Grass, or, as it is sometimes termed, *Ray*—one of the most beautiful grasses yet introduced into this country, and doubt not that it will also prove itself one of the most valuable, either for green food or hay." The Farmer correctly describes the sort we are acquainted with, and from our small experiments, we feel assured it will suc-

ceed as well in this latitude as elsewhere in the Union. September, if seasonable, is probably the best time for sowing. But in our case the seeds were planted early in spring, and although the succeeding summer, as every one knows, was very dry throughout, it grew finely and maintained its freshness and beautiful green appearance. We have also proof that it will withstand our coldest weather, as our little "patch" has grown vigorously through our past unusually severe winter. For lawns and woodland pastures we know nothing prettier—not even the far-famed Kentucky Blue-Grass. The Farmer says:

"This grass, recently introduced into the United States, is either a native of Italy or Germany, and is probably perennial. It differs from the common kinds of Rye-Grass in many botanical particulars, which it is needless to enumerate, and which are only intelligible to the scientific eye; but to the ordinary observer, it differs very perceptibly in presenting a darker green color, and having much more abundant and broader foliage. It very commonly attains the height of four feet and sometimes more, and is not inclined to spread on the ground. If sown in September, it may be cut in the following May; and if sown early in March, it will yield a heavy crop in July. Whether given as green food or converted into hay, it is eaten with avidity by cattle, which have, in various instances manifested their preference for it to the common sorts, which is accounted for by its superior succulence and softness. It braids much quicker than other species of Rye-Grass known to us, arrives sooner at maturity, and is in every respect superior to all of them. As it overpowers clover when sown with it, it is useless to sow them at the same time; and the only chance of their doing well together would be on poor soil, where the vacancies between the turfs of Rye-Grass might be filled with clover, to be available in the second or third mowings. It is sown in the usual way after a harrowing, and covered with a brush-harrow and roller, and the quantity of seed for clean ground is about twenty-one pounds per acre. Among its other good qualities, it is found to withstand the influence of frost better than any other variety of grass. In a word, it is a decided acquisition to our agriculture."

Lasting Effect of Bones.

Bones, in their natural and unbrushed state, show little immediate effect, in consequence of their power of resisting, but if mixed in large quantities, in a crude or semi-pulverized state, with the soil of a field, the benefit would undoubtedly be extremely lasting. The effect would not be manifest in the remarkable increase of any crop, but in the moderate production of many crops through a series of years. Any one who has ever taken pains to study the subject, cannot have failed to observe the slow decomposition of unbrushed bones, as from year to year they are turned up by the plow from out the soil of the garden. They may not have been placed there intentionally to answer the purpose of a manure, but have been thrown out from the kitchen into the most convenient place for getting rid of them. The bones in this position slowly decompose, yielding up their constituent elements to new combinations, the earthy particles at the same time crumbling into dust.

A man should not labor solely for his own immediate benefit, but he should look to the benefit of future years; and hence, if there be no conveniencies at hand for converting bones into super-phosphate of lime, or of crushing them to dust, they ought by no means to be wasted. Their incorporation, in an unbrushed state, with the soil, will greatly add to its lasting fertility.

We know of a field in an adjoining county that had been cropped for thirty years, and is now in a high state of fertility. The surrounding fields are nothing like it, and with similar cultivation would by this time have been utterly impoverished. The former is the site of an old Indian burying ground, and when the country was first settled, was indented with graves within six feet of each other, all over the surface. The dead were buried in a sitting posture, not over two feet below the surface, and the writer, when a boy, filled his pockets many a time with beads and arrow-heads, turned up by the desecrating plowshare. The half decayed bones of the aborigines are this day to be seen mingled with the soil, and, sad as it may seem, furnish food to successive crops of grain and grass. If the soil at any time gave signs of impoverishment, the occupant merely run the plowshare a few inches deeper, and *turned up a few more Indians!* A goodly number of the readers of the *Rural* will recognize the place referred to, and can vouch for the truth of the above statement. The melancholy truth cannot be gainsayed, that the ashes of a former race of men are to this day enriching many of our fields, and the fact is thereby established that animal remains, and especially bones, are of lasting benefit as an element of fertility.—*Rural New Yorker.*

Feeding Bees.

The theory of feeding bees on a large scale has had its day. It has presented splendid results for a time, and resulted at length in splendid failures. Cheap honey, or a composition has been used, and the Bees have been fed freely, under the impression that whatever they stored in their cells must of course be honey of the first quality. I would ask why Cuba or Southern honey is not made of the first quality when it is stored up for the first time in Cuba or Florida, if Bees have the power of converting an inferior article into one of superior quality. The true reason is that much of this so-called honey is taken from the sugar plantations, or from flowers which do not furnish the best honey. And the second transportation, although done by "Yankee" Bees, does not produce any chemical change in the article which is fed. Honey is *gathered*, not *made* by the Bees. Those who purchase in market Cuba honey which is packed up in "Yankee" boxes, do not get the best end of the bargain. They have yet to learn that the packing or transportation does not make it the fine flavored and wholesome article which is found in white clover upon all our hills in New England. The feeding of Bees on a large scale, or with a view to secure larger quantities of surplus honey, operates unfavorably upon the Bees in a variety of ways, and the principal objections to it are the following: 1. There is no profit in it. No man gets the quantity of honey which he feeds. 2. It prevents the Bees from going abroad to gather honey from the fields. 3. If the Bees are fed liberally late in the fall and early in the spring, there will be very few empty cells in which to rear young Bees. 4. It is deceptive, because a cheap and inferior article is sold for one of superior quality. 5. It results, in the process of time, in the extinction of the Bees. The feeding of Bees may be practised with advantage whenever they are not amply supplied with winter stores, a thing which happens to late swarms and to those from which large quantities of honey have been taken. For this purpose a cheap article may be used to help them through the winter. It may be desirable to take from the Bees all the white clover honey which can be obtained in boxes with a view to supply the Bees with a cheaper article. —*Eddy.*

The Japanese Yam.

The Japanese Yam (*Dioscorea Japonica* of botanists,) is the name under which a new vegetable has been recently imported, and which, from the few experiments that have been

made in its cultivation, promises to be one of great importance. According to the best foreign authority, it is "of all the esculent roots proposed as a substitute for the diseased potato, the only serious one. Largely grown in China, it is very hardy, and stands the winter under the climate of Paris perfectly well. It is easily propagated by cuttings of its long vines, and by its roots, which are, like those of the potato, of annual growth. The roots are large and long—the flesh very mealy, and devoid of any peculiar or disagreeable flavor." It has been pronounced by eminent cultivators in France, "a precious acquisition."

The result of the few that were grown in this country during the last season, was very satisfactory. The N. Y. Commercial Advertiser states that Mr. Bolles exhibited some of the roots at a late meeting of the New York Horticultural Society, and described them as giving a large yield, capable of bearing a cold climate, and of remaining in the ground during the winter.

From the few specimens I have had the privilege of examing, the shape resembles the sweet potato, though less uniform. The flavor is said to be somewhat similar to the same vegetable, but it is thought that wherein it differs, its tendency will be to come into even more general use. Its nutritious properties are said to exceed those of any other known root.

Of its adaptedness to the climate of the Middle States, I believe there can scarcely be a doubt; and there is every reason for the belief, that even in Massachusetts, its cultivation will be attended with the most complete success.—*Mass. Ploughman.*

Beans with Indian Corn.

It has long been an undecided question, whether beans planted with Indian corn, are an actual injury to the crop. Last year I had a piece of corn on the south side of a hill, of rather gentle descent, and as it presented a favorable opportunity, I determined to make the trial. There were fifty rows of thirty-six hills each, in the piece. Commencing on one side, I counted off eight rows, and planted the ninth, tenth, eleventh and twelfth to corn and beans—dropping the beans not *with* the corn, but about six inches on one side. Eight more rows were then counted off, and the next four planted in the same way; the remainder of the entire piece was planted to corn alone.

At harvest, the first four rows, having the beans in them, were cut and weighed, and then the four rows immediately contiguous on either side, were cut and weighed. The same course was pursued in reference to the other rows, and the rows nearest them on either hand, and the result was no perceptible difference existed in the amount of corn produced by the rows having beans in the hills, and that of the rows having none. The soil throughout the piece was as nearly of the same quality as it well could be, and the management of the entire piece was in every respect the same. The beans made a very good crop, were well filled, plump and fair, and the corn was also good. The manure used, was short muck, one shovel full to the hill. The crop was hoed three times, and a gill of plaster applied to the hill at the second hoeing.—*S. W. J. in Germantown Telegraph.*

Remedy for the Wire Worm.

Mr. D. Thompson, of Adams' Basin, in this county, informs us that he sowed a field to oats upon his farm soon after it was purchased by him, and that the crop was entirely cut off by the wire worm. He has since found by unmistakable experiments, that hog manure is an entire preventive against their depredations. He has tested it repeatedly and in a variety of ways, and always with success. One time he distributed the manure broadcast over a portion of a field of corn, and plowed it in previous to planting, leaving another portion unmanured. In that part where the manure was distributed he had a good yield while on the other the ravages of the worm was such as to destroy the crop.

At another time he placed the manure in the hills of corn in certain rows, leaving adjacent rows unmanured, and the result was the former were untouched, while the latter were entirely cut off. If this remedy is as efficacious as Mr. Thompson assures us it is, the fact is invaluable for some localities. At all events the application will be of great advantage to the crop in other respects, if it fail in the one claimed for it.

A correspondent in Peterboro' writes us that ashes mixed with the barn-yard manure applied in the hill to corn, seems to act as a specific with him, preserving the crop from their ravages, while that, to which it was not so applied, suffered severely.—*Rural New Yorker.*

Farm Implements.

To use that old plow longer is bad economy; repairs have already come to more than the original cost, and still, it is an old, ricketty plow. It always did "run to land" too much, and always will, perplexing the plowman and fretting the team. It has a radical defect past all cure of inventor or mechanic. Do not work with heavy, uncouth implements—they drag down the body like a perpetual sorrow upon the mind. Boys often acquire a disgust for farming, merely from the use of the miserable implements placed in their hands. The lighter the tool, the better, if strong enough for the work for which it was intended. The workman who uses his shovel to pry up a stone, and breaks it, should be required to pay for it, and the next time, if not incorrigibly lazy, he will probably use the bar. Use light rakes, made of good material, and so of hoes, spades, scufflers, and all other implements. We have beaten the English in the construction of our agricultural implements, in their adaptation to the work required of them.—*N. E. Farmer.*

Beet Root Vinegar.

In these times of a scarcity of apples and cider, the following statement made by N. P. Fairbanks in the "Boston Cultivator" is worth considering. He says:—The juice of one bushel of sugar beets, worth twenty-five cents, and which any farmer can raise with little cost, will make from five to six gallons of vinegar, equal to the best made of cider or wine. First, wash and grate the beets, and express the juice in a cheese-press or in any other way which a little ingenuity can suggest, and put the liquor into a barrel; cover the bung with gauze and set it in the sun, and in fifteen or twenty days it will be fit for use. By this method the very best of vinegar can be obtained without any great trouble, and I hope all who like good vinegar will try it.

As this may readily be tried by *almost* any one, we hope to hear from some of our friends on the subject next winter.

Another Cure for Garget.

Mr. Joseph Merriman, of Ohio, in an article communicated by him to the Ohio Farmer on this subject, says the disease may be cured thus:—"Take raw linseed oil and rub all over the cow's bag, which, if done on the first appearance, is all that is needed generally, but two or three applications always have cured the most stubborn cases, and is easily done." He says he has seen cows that no milk could be got from, cured in forty-eight hours, in summer, and they gave nearly as much milk as they did before they were sick. This is certainly easily tried, and no great harm can be done to the cow if it should not prove successful.—*Me. Farmer.*

Production, Preservation and Ripening of Fruit.

BY HON. MARSHALL P. WILDER, PRESIDENT OF AMERICAN POMOLOGICAL SOCIETY.

The immense loss to American cultivators, from the importation of foreign varieties, in many instances not well adapted to the countries from which they come, and often still less adapted to our soil and climate, suggests the importance of raising from seed, native sorts which, in most instances, possess peculiar advantages. It is now generally conceded that the trees and plants of a given country, like its aboriginal inhabitants, will flourish better at home than in most foreign localities.

We rejoice that public attention has been turned to this subject by some of our horticultural journalists, and that many cultivators and amateurs are engaged in this interesting and promising department. The success which has crowned their exertions affords great encouragement to perseverance. Witness, for instance, thirty or more varieties of the cherry, by Dr. Kirtland, of Ohio, which appear adapted to our eastern climate, and some of them of superior excellence. Witness the numerous varieties of the raspberry, by Dr. Brinckle, Ex-President of this Society, of which, some have endured, without covering, the severities of the last winter in the New England States, and which also promise to be valuable contributions to American pomology. In addition to these, how many new varieties of the apple, the pear, the plum, and the grape, have recently been added to the list of American fruits. How many new and excellent varieties of the strawberry have appeared since the introduction of Mr. Hovey's Seedlings.

These are sure indications of the success which will reward future efforts to obtain valuable native varieties of fruit; and they point to a fulfilment of the prediction of the celebrated Van Mons, "that the time will come when our best fruits will be derived from seedlings." He gives the following sage counsel to his correspondents, to whom he had sent trees:—*Sow your seed and persevere without interruption, and you will obtain better fruit than mine.*"

Among pioneers in this department, I am happy to notice a gentleman, (now residing among us) the pupil and friend of Van Mons, one who has adopted our country as his future home, and who has already transplanted to our soil many thousands choice seedlings of the pear, which have come into his possession from the collections of that gentleman and the celebrated Esperen.

As to the best method of producing fine varieties from the seed, the opinions of distinguished pomologists are not uniform.

DUHAMEL, among the French, from causes which seem to us irreconcilable with nature and experience, entertained serious doubts of the practicability of any method for obtaining new and valuable varieties from seeds, especially of the pear, because he has tried various experiments without success for fifty years.

Dr. Van Mons, of Belgium, instead of saving the seed of the *finest* varieties, selected those of inferior sorts, upon the principle that a kind having arrived at the highest state of perfection must deteriorate, while an inferior one would improve by successive reproductions. He also held that hybridization tended to degeneracy and imperfection. Thus he assumes the doctrine that a perfect variety necessarily deteriorates, and also overlooks the fact, observed by other distinguished men, that the improvement or deterioration of which he speaks, may result from natural impregnation by the pollen of other varieties conveyed by the air or insects, and therefore that the seed of a good variety may produce either a better or a worse, and that of a bad either a worse or a better.

Mr. Knight's system of obtaining new and improved varieties, depended entirely on hybridization, or artificial impregnation, so lightly esteemed by Dr. Van Mons. This is somewhat difficult to practice on account of natural fertilization by insects and the wind; but it has the merit of depending on a truly philosophical principle, and with very particular attention may yet prove as available for the improvement of our fruits as it has for the production of fine varieties in the vegetable and floral kingdom, or as the corresponding principle has in the crossing of the breeds of domestic animals.

The result of Mr. Knight's experience disprove the tendency to degeneracy, inasmuch as many of his fruits, obtained by hybridization, are among the most durable and hardy varieties, as the Eyewood and Dunmore Pears; the Black Eagle, and other Cherries.

Many cultivators, as Esperen, Bivort, Berckmans, and others, both in this and foreign countries, have sown seeds in variety, and have obtained some valuable sorts. But I am confirmed in the opinion, that the best means of producing new and excellent varieties, suited either to general cultivation or to particular localities, is to *plant the most mature and perfect seed of the most hardy, vigorous, and valuable sorts;* on the general pathological principle that "like produces like," and upon the conviction that immature seed, although the embryo may be sufficiently formed to vegetate, yet not having all its elements in perfection, it will not produce a vigorous and healthy offspring. Dr. Lindley, commenting upon this practice, justly remarks—"All experience shows that in every kind of created thing, be it man or beast, or bird, the mysterious principle, called life, remains during the whole period of existence what it was at first. If vitality is feeble in the beginning, so it remains. Weak parents produce weak children, and their children's children are weaker still, as imperial dynasties have sadly shown." With him, we believe this theory as applicable to the vegetable as to the animal kingdom. May not a disregard of this doctrine account for the great number of feeble, sickly, early defoliated trees often found in our grounds by the side of those that are vigorous, healthful, and persistent in foliage? Is not the theory we advocate as important in the production of fruit trees, as in the raising of cereal grains? The skilful agriculturist saves the best seed of his various crops, and selects the best animals from his flocks and herds for breeders. Why should not this law of reproduction regulate the practice of the pomologist as well as the farmer? Has the All-wise and Infinite enacted several laws, where one would subserve the purpose.

To the doctrine of Van Mons, and other distinguished writers, respecting deterioration by age, and after a variety has reached its perfection, there seem to be some exceptions. From the accounts of oriental travellers, may we not believe that the grapes of Eschol are as perfect now, as when the chiefs of Israel plucked their rich clusters three thousand years ago?—and the same variety of the fig, the olive, and pomegranite are as perfect in Syria, to-day, as in the period of David and Solomon? It is worthy of inquiry whether the native grapes, on the banks of our rivers, have deteriorated since the day when the red men of the forest refreshed themselves with fruit from those vines, and whether the orange, the lemon, the bananna, and the fruits of southern latitudes, evince any more signs of decay than they did centuries ago? In a word, whether this doctrine of deterioration is as applicable to the native, as to the foreign fruit of a country?

Why may we not expect to obtain natural varieties of the apple and other fruits, as durable and far more valuable than those which have passed their second centennial, as the En-

dicott and Stuyvesant Pears? From meteorological or other causes, which we do not at present understand, particular varieties may deteriorate in a given locality for a season, and afterwards revive; or, they may show signs of decay in one locality and flourish well in others not very remote—as the White Doyenne, which has been considered for many years, by some in this vicinity, on the decline, while it is perfect in several places in Maine, New Hampshire, Vermont, and other States. Fruit-bearing may exhaust the vital energies of the tree and hasten decay, but still the variety may remain. We have, among fruit trees, no example of longevity equal to that of the new Taxodium, found in California, supposed to be three thousand years old. Our object is not to controvert the opinions of those who believe in the running out of varieties, whether their duration be limited to one hundred or one thousand years; but to enforce the importance of raising new varieties from seed, especially adapted to our own location.

PRESERVATION AND RIPENING OF FRUIT:—Much progress has been made in this art within a few years, and important results have been attained. The principle has been settled that the ripening process can be controlled. Autumnal fruits have been kept and exhibited the succeeding spring. We have seen the Seckel, Bartlett, and Louise Bonne de Jersey pears, in perfection in January, and even later. The maturity of fruits depends on saccharine fermentation. This is followed by other fermentations, as the vinous and acetous. To prevent these, and preserve fruit in all its beauty, freshness, and flavor, the temperature must be uniform and kept below the degree at which the fermentation or the ripening process commences. Our remarks, like our experience, have special regard to the apple and the pear, though the principle is doubtless susceptible of a more extensive application. Fruits, designed to be kept for a considerable time, should be gathered with great care some days before the ripening process commences, especially summer pears. A summer pear ripened on the tree is generally inferior. In respect to the latter, Mr. Barry, Editor of the Horticulturist, has so aptly expressed my own sentiments, that I use his language. "The process of ripening on the tree, which is the natural one, seems to act upon the fruit for the benefit of the seed, as it tends to the formation of woody fibre and farina. When the fruit is removed from the tree, at the very commencement of ripening, and placed in a still atmosphere, the natural process seems to be counteracted, and sugar and juice are elaborated instead of fibre and farina. Thus, pears which become mealy and rot at the core when left on the tree to ripen, become juicy, melting, and delicious, when ripened in the house." Various fruit houses have been built both in this country and in Europe; and experience shows that their object can be obtained only by a perfect control of the temperature, moisture, and light. Hence, they must be cool, with non-conducting walls, or with exterior and interior walls, or a room within a room. Thus the external atmosphere, which either starts the saccharine fermentation or conveys the agents which produce it, can be admitted or excluded at pleasure. It is possible, however, to preserve the temperature at so low a degree and for so long a time as to destroy, especially with some varieties of the pear, the vitality, and therefore all power ever to resume the ripening process. Experience proves that for the common varieties of the apple and pear, about forty degrees of Farenheit is the temperature best suited to hold this process in equilibrium.

The proper *maturing* of fruit thus preserved, demands skill and science. Different varieties require different degrees of moisture and heat, according to the firmnesss of the skin, the texture of the flesh, and the natural activity of the juices. Thus, some varieties of the pear will ripen at a low temperature and in a comparatively dry atmosphere, while others, as the Eastern Beurre, are improved by a warm and humid air.

Some varieties of the pear, ripening with difficulty, and formerly esteemed only second rate, are now pronounced of excellent quality, because the art of maturing them is better understood.

But so many experiments have been tried, or are in progress, and so much has been written on this branch of our subject, that I need not enlarge except to say that the art of preserving and ripening fruit in perfection, involves so much scientific knowledge as to require great attention and care; and, until its laws are more fully developed, must be attended with considerable difficulty. I therefore commend it to your special attention, as second in importance only to the raising of new varieties.

Truths Established by Agricultural Chemistry.

FROM LIEBIG'S NEW WORK.

The growth of a plant presupposes a germ, a seed; the land plant requires a soil; without the atmosphere, without moisture, the plant does not grow. The words soil, atmosphere and moisture, are not of themselves conditions; these are lime, clay, sand-soils, soils originating from granite, from gneiss, from mica-slate, from clay-slate, all entirely different in their composition and qualities. The word soil is a collective word for a large number of conditions. In a fruitful soil, these conditions are combined in proportions adapted to vegetable growth; in an unproductive soil, some of them are wanting. In the same manner, the words *manure* and *atmosphere* include a plurality of terms or conditions. The chemist, with the means at his command, analyses all kinds of soil; he analyses manures, the air and the water; he resolves the collective words which express the sum of the conditions of vegetable growth into their single factors, and, in his explanations, substitutes the individual for the combined values. In this process, it is evident there is nothing hypothetical. If it pass for a perfectly established truth that the soil, the atmosphere, water and manures, exercise an influence upon the growth of the plant, it is no less beyond doubt, that this influence is entirely due to the constituents of the soil, &c.; and the province of the chemist is to set these ingredients before the eyes of those occupied with vegetable cultivation, and to illustrate their qualities and relations.

1. Plants in general derive their carbon and nitrogen from the atmosphere—carbon in the form of carbonic acid; nitrogen in the form of ammonia. From water (and ammonia) they receive hydrogen. Their sulphur comes from sulphuric acid.

2. Cultivated in soils, situations and climates, the most various, plants contain a certain number of mineral substances, and in fact always the same substances, whose nature is learned from the composition of the ash. These ingredients of the ash, were ingredients of the soil. All fruitful soils contain a certain quantity of them. They are absent from no soil in which plants flourish.

3. In the produce of a field is carried off and removed from the soil, the entire quantity of those soil-ingredients, which has become constituents of the plant. The soil is richer at seed-time than at harvest. The composition of the soil is changed after the harvest.

4. After a series of years, and after a corresponding number of harvests, the productiveness of a field diminishes. When all other conditions remain unchanged, the soil alone becomes different from what it was previously; the change in its composition is the probable cause of its becoming unproductive.

5. By means of manures, as stable dung and animal excrements, the lost fertility may be restored.

6. Manures consist of decayed vegetable and animal matters, which contain a certain quantity of soil-ingredients. The excrements of animals and of man represent the ashes of food burned in the animal or human body, i. e. the ashes of plants, which have been gathered from the soil. In the urine are found those ingredients of the plant, derived from the soil, which are soluble in water; the solid excrements contain those which are insoluble. Manures contain the materials which the consumed crops have removed from the soil. It is plain that by incorporating manures with the soil, the latter receives again the withdrawn ingredients. The restoration of its original composition, is accompanied with the recovery of its original fertility. It is certain that one of the conditions of fertility is the presence of certain mineral ingredients in the soil. A rich soil contains more of them than a poor one.

7. The functions of the roots of plants in reference to the absorption of atmospheric food, are similar to those of the leaves, i. e. the former, like the latter, possess the property of taking up and assimilating carbonic acid and ammonia.

8. Ammonia, which is contained in or added to the soil, comports itself as a soil-constituent. The same is equally true of carbonic acid.

9. Animal and vegetable bodies and animal excrements, enter into putrefaction and decay. The nitrogen of the nitrogenous matters is thereby converted into ammonia, a small portion of the ammonia decays (oxydizes) further into nitric acid.

10. We have every reason to believe that nitric acid may replace ammonia in the processes of vegetable nutrition, i. e. that its nitrogen may be applied by the plant to the same purposes as that of ammonia. Animal manures accordingly furnish the plant, not only with those mineral substances which it is the function of the soil to furnish, but also with those forms of food which it naturally derives from the atmosphere. This supply is an addition to that quantity which the atmosphere contains.

11. Those forms of vegetable food contained in the soil, which are not gaseous or volatile, enter the plant through its roots. The vehicle of their transmission is water, by the agency of which they become soluble and transportable. Many of these kinds of food dissolve in pure water, others only in water which contains carbonic acid or a salt of ammonia.

12. All those substances which exert a solvent action on such ingredients of the soil as are themselves insoluble, cause, by their presence, a given volume of rain water to take up a larger quantity of vegetable food than it otherwise could.

13. From the progressive decay of the organic matters of manure, originate carbonic acid and ammonia-salts; they constitute an active source of carbonic acid in the soil, whereby the air and water present in the soil are made richer in carbonic acid than they could be in their absence.

14. Animal manures not only offer to the plant a certain amount of soil and atmospheric food, but in their decay, is supplied, in the form of carbonic acid and ammonia, an indispensable means of rendering soluble and available to the plant the insoluble ingredients of the soil, in greater quantity, and in shorter time, than could occur in the absence of decaying organic matter.

15. Other things being equal, vegetation receives less water through the soil in warm, dry seasons, than in wet years; the harvests in different years stand in relation thereto. A field of given quality yields smaller crops in dry seasons; by the same average temperature, the yield increases, to a certain limit, with the increase of the quantity of rain.

16. Of two fields, one richer, one poorer in plant-food, the richer yields in dry seasons more produce than the poorer, other things being equal.

18. Of two fields alike in character, and containing an equal amount of soil-ingredients, one of which, however, has, besides, a source of carbonic acid, viz., decomposable vegetable or animal matter, the latter yields more in dry seasons than the former.

The cause of this difference in yield lies in the unequal supply of matters, both as concerns quality and quantity, which the plant receives from the soil in a given time.

[To be continued.]

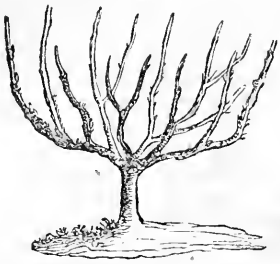
The Yellows in Peach Trees.

This disease was first known in New Jersey, but at what time, or place, I have no means at present of ascertaining. It has now spread over most of New Jersey, a part of Delaware, some in Southern New York, and a part of Connecticut. It may be called the *cholera* of the peach trees, but is more fatal to them than the Asiatic cholera is to the human family; in the latter case many that are attacked, recover, but in the former, none. In both cases, quacks have advertised their specifics, but I venture to say, that there never has been a single instance where a peach tree that had the yellows was restored to a healthy state. This disease first manifests itself by a change in the color of the leaves, as the name indicates, from a healthy green to a sickly yellow. The branches are stunted in their growth, although having as many buds as would appear on a healthy shoot—they are all crowded on a short space, and when the leaves put out in the spring, they more resemble a tuft of leaves than a proper shoot.

For one or two years the fruit sets and swells out to a moderate size, puts on the appearance of ripening, and falls from the tree from two to four weeks sooner than the same variety ripens upon healthy trees. Upon close inspection such varieties as have red cheeks will be found to have a different appearance from healthy fruit; the blush upon the cheek will be found to resemble blotches of erysipelas, and appear a little elevated. The early, imperfect ripening of the fruit has a tendency to spread this disease. Those who are not acquainted with the effects of the disease, on discovering what they consider a new and early variety, often procure buds which they insert into healthy trees, any one bud of which is sufficient to communicate the disease and consequently to kill the tree in two or three years. Again, their early fall and appearance of maturity taking place at a time when peaches bring the highest price in New York, immense quantities of them are sent to that market, and from thence through the Northern States, thus distributing the seeds over a great extent of country, every one of which, when planted and trees raised from them, will be found to have the yellows.

There is another manner in which I think this disease is spread, and that is by the pollen from the flowers. It is allowed that when a peach tree has the yellows every part of it is affected. If this is the case, then the pollen, being a part of the tree, is diseased. The firmness of foundation of plants is, I believe, correctly understood. The pollen is a small globule of lymphatic matter secreted by the stamens, which when disengaged floats in the atmosphere and is also transported by bees from one flower to another, and when a particle of this pollen strikes upon the point of the pistil of another flower, which point is always wet at the time of inflorescence, the globule of farina bursts, and the lymph is

mixed with that of the pistil, which is a hollow tube, connected with the germin, or young seed, the paricarp of which being expanded and contracted by the variation of temperature, this lymph of the pollen thus mixed with, is taken into circulation in the rudiments of the young plant. If this is correct, then it follows that the young plant, when the pistil is thus impregnated with diseased pollen, must be diseased also.—*G. in Rural New Yorker.*



Pruning Currants and Gooseberries.

We copy the above cut from the Gardener's Chronicle, showing the true form of Currant and Gooseberry bushes when properly trimed.—Ed.

The pruning of Currant and Gooseberry bushes is seldom performed in cottage gardens; the consequence of which is, that every bush in time becomes a mass of wood, producing a quantity of worthless fruit, without either size or flavor. This is to be easily remedied by a little attention to pruning the bushes in winter, and never allowing the branches to be too crowded or to interfere with one another. The shoots which spring up in the centre should be cut away very closely, as well as the small shoots on the main branches, leaving only one at their points, which must be shortened for about a third of its length. If this is done, the bush will have the form of a cup, with the branches ranged regularly round the stem, as in the accompanying wood cut. Red and white Currant require the same treatment, as they produce their fruit on spurs in the way of the Gooseberry. The black Currant must be managed differently, as it bears chiefly on the shoots of the preceding year; instead, therefore, of spurring and otherwise shortening the branches, all that is necessary is to thin them, and keep the bushes compact. —*Gardeners' Chronicle.*

Agriculture in France.

A letter writer for the *Republic* says:—"A trip of six hundred and fifty miles, from the northern to the southern extremity of France, justifies me in the expression of my opinion that the sun does not shed its rays on so fair a land, or one so thoroughly cultivated. The whole country is literally a garden. Every square foot, from the mountain-top to the lowest ravine, is made to produce something, if it be susceptible of it. Their mode of planting or sowing their crops; whether on plain or hill side, produces the finest effect on the appearance of the landscape. The place allotted for each crop is laid out in squares, or parallelograms, with mathematical precision, and whether large or small, the best garden could not be divided with greater accuracy. As there are no fences or hedges, and as the different crops are in various stages of maturity, you can imagine the variety of hues that meet the eye, and the magnificence of the panorama that stretches out in every direction as far as the vision can penetrate. In the absence of fences, cattle, secured by ropes, are driven about their pasturage by females, and sheep are confined within the required limits by boys, assisted by a shepherd's dog."

Superphosphate of Lime.--Its Effects on Winter Grain, and its Different Prices.

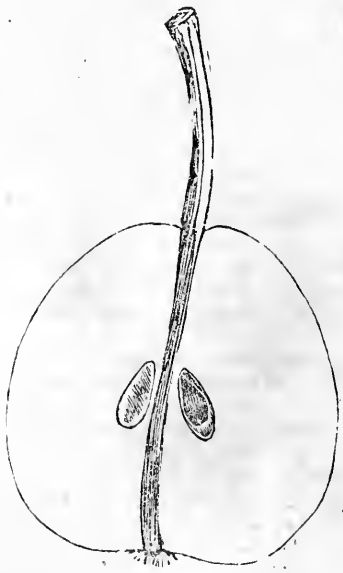
MR. DARLINGTON:—I procured the article (made after Prof. Mapes's direction) last fall, applied it to Rye at the rate of 400 lbs per acre, and harrowed it in with the Rye. It has a powerful effect on our Schuylkill county soil. Some of my fellow farmers have used the article manufactured and sold by Allen & Needles, and speak very highly of it.

The question now arises, why is Mapes's sold at $50 per ton, while that of Allen & Needles is at $40?

The quantities of the different ingredients of which the former is said to be composed, are published to the world, consisting of 100lbs. Bone Black, 56 lbs. Sulphuric acid, 36 lbs.of Guano, and 20 lbs. Sulphate of Ammonia. I have now some of the article manufactured by Allen & Needles on hand intended for the oats crop. It is certainly no more than proper that the farming community should know of what the article sold by the latter gentleman is composed of, and its proportions. A difference of 25 per cent. is an item of importance to the farmer. J. S. KELLER.

Orwigsburg, April 16, 1855.

We beg to suggest to our friend Keller, to test the comparative merits of the two articles by using them side by side in alternate portions of a field. He will by this means learn which composition is best suited to the soil in his region. We should be happy to publish the result.—ED.



DEARBORNS' SEEDLING.

A very admirable, early pear, of first quality, raised in 1818, by the Hon. H. A. S. Dearborn, of Boston. It bears most abundant crops in every soil, and is one of the most desirable early varieties, succeeding the Bloodgood, and preceding the Bartlett. Young shoots long, dark brown. Fruit scarcely of medium size, turbinate, and very regularly formed. Skin very smooth, clear light yellow, with minute dots. Stalk slender, rather more

than an inch long, set with very little depression. Calyx with delicate, spreading segments, set in a very shallow basin. Flesh white, very juicy and melting, sweet and sprightly in flavor. Ripens about the middle of August.

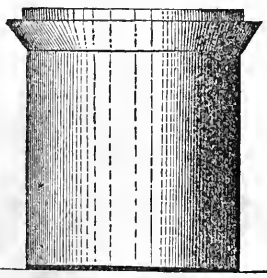
Exhibition of the Philadelphia Society for Promoting Agriculture.

This Society have concluded to hold an exhibition the coming fall, and on the grounds at Powelton, occupied by the State Society last year. It is the intention, we understand, to combine with the usual display some other objects of industrial pursuits, to increase the attractiveness of the occasion, and for which the ample extent of the grounds present unusual facilities.

When the Philadelphia Society puts out its strength, as it no doubt will do this time, a display may be expected for a county exhibition, unequalled. The committee having charge will of course fix the time so as not to interfere with the State exhibition at Harrisburg, or of our friends over at Camden.

County Exhibitions.

Our friends throughout the State will please forward as early as convenient for record in the Farm Journal, the times and places of the various county exhibitions so soon as they are determined. We wish to insert them all as soon as we have correct information, which will probably come most appropriately through some of the officers, also the names of the latter recently elected, or holding over.



ARTHUR'S PATENT AIR-TIGHT, SELF-SEALING CANS AND JARS,

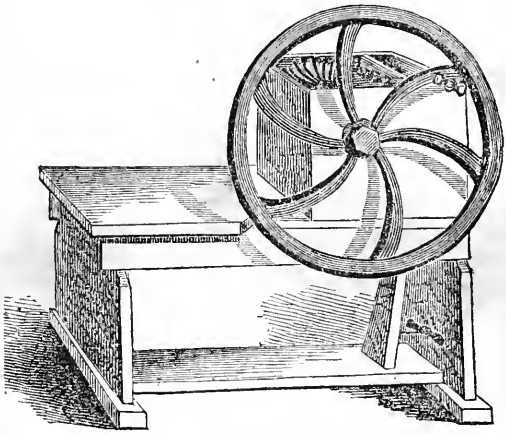
For Preserving Fresh Fruits and Vegetables.

This invention, for which a patent has been obtained, commends itself to the attention of housekeepers and others, on account of its great simplicity, and the effectual manner in which it accomplishes a very desirable and useful object.

The following is the description of the patentee: "The cans and jars are constructed with a channel around the mouth, near the top, into which the cover fits loosely. This channel is filled with a very adhesive cement, prepared for the purpose, and allowed to harden. In order to seal the vessel hermetically, *it is only necessary to heat the cover slightly, and press it into place.* It may be opened with as much ease as it is closed, by slightly warming the top. The ordinary tin cans, used for the same purpose for which this is intended, cannot be closed as is well known without the aid of a tinner; are difficult to open, and are generally so much injured in opening as to be useless for future service.

By this simple contrivance, the process of hermetical sealing is placed conveniently within the reach of every individual; and fruit, vegetables and butter (if properly prepared) may be kept with their natural flavor unimpaired, for an indefinite length of time."

We may add that there is no difficulty in preserving fruits and vegetables fresh and perfect from one season to another, all that is necessary being to *expel* and *perfectly exclude* the air. Our table is occasionally (May 22) supplied with tomatoes of last year's growth, as perfect as the day they were put up, and we recently ate "peach pie" equal to any made from fresh fruit in August or September. For particulars as to price, &c., see advertisement.



ELDRIDGE'S PATENT CORN SHELLER.

The above is a representation of this machine, which for simplicity and adaptation to the purpose intended, is not surpassed. It occupies about one foot by three, weighs about forty-four pounds, and is intended for one *person* to feed and shell. We are informed that one man with it may readily shell from ten to twelve bushels per hour with ease. It does the work well, seldom leaving a grain on the cob, and depositing the shelled corn in a small compass.

It appears highly adapted to a small farm, or to any one who does not want more than one hundred bushels shelled per day.

Further information, as well as patent rights for Bucks and Montgomery counties, and of the city of Philadelphia, also shop right and single machine. Application may be made to N. J. Embree, 273 Race Street, above Eighth.

Varieties of Roots for Field Culture.

To keep our readers posted up in respect to the characterstics of vegetables usually sown for field culture, and the peculiar properties of each, we subjoin a short description, first of the *Carrot*, four kinds of which are used by our farmers and gardeners.

The Early Horn Carrot is of a deeper red color than any other variety, as well as of smaller size, and of finer flavor. It is only cultivated in this country, in the

garden for table use. In addition to its small size at maturity, and its deep color, it is peculiar and may be readily recognized by the abrupt termination of the tapering point.

The Red Altringham Carrot is used for field culture, as well as the garden, resembles the above in color, but seems to have a constitutional tendency to run into sub varieties. It keeps well for winter use, and is of fine flavor, but does not grow so large as the two following. It is peculiar in having its crown two or three inches above ground, and rather irregular taper.

The Long Orange Carrot is the kind most usually cultivated and known in the United States, for a field crop. It is of an orange color, sometimes inclining to red, and grows often to the length of two feet, with a regular taper from its crown to the point. Very little of it appears above ground. With proper cultivation six hundred bushels of Long Orange Carrots have frequently been and may be raised on an acre.

White Belgian Carrots are larger than either of the others, and have been grown at the rate of one thousand bushels to the acre. They are much thicker than long, somewhat in shape resembling the mangle wurzel, white under ground, and green on the top, with the head considerably above the surface. Although but of comparatively recent introduction, the White Belgian carrot is now very extensively cultivated by the best farmers in France and Belgium, and other parts of the continent, and is thought by them to yield a larger bulk of produce than any other, as well as an equal proportion of saccharine matter.

There are two other varieties of carrots cultivated in England and France, under the name of *Large Red and Large Orange*, but they are so little known here as to make a description unnecessary No *farmer*, and especially no *dairyman*, should fail to plant a crop of carrots, both for his cows and horses.

The two *Beets* cultivated for a field crop known as the Sugar Beet and Mangel Wurzel, seem to have originated in Germany, the former being a variety of the latter. The name anglicised means "*root of scarcity*," not a scarce root, but a root for a time of scarcity, thriving and growing abundantly when every other crop fails. The Mangel Wurzel grows to an enormous size and produces most abundantly to the acre. Specimens have been grown weighing over fifty pounds, and the average produce to the acre, for a period of seven years, as recorded by some English writers, is from seven to sixteen tons, the worst not falling below five, and the best not exceeding sixteen tons. The Mangel Wurzel roots are externally of a dull reddish color, internally somewhat marbled, with reddish or reddish green leaves. The Sugar Beet or White Mangel Wurzel has green leaves, with light green colored ribs, and is white both externally and internally. They are very much the same in shape and size, and equally hardy and productive. On analysis, the Sugar Beet has been found to yield more nutritive matter than the other, causing it to be generally preferred.

The Mangel Wurzel differ so much from our garden beets, in several characteristics, that Botanists have been divided in opinion where to place them, some viewing them as a hybrid, others as a distinct species, under the name of Beta Altissima, and some as a mere variety of the common beet. For all practical purposes, they may be designated as *field* and *garden beets*.

The Ruta Baga or Swedish Turnip is well known and more generally cultivated for stock than perhaps any other vegetable. It is superior to the common turnip for this purpose, on account of its larger proportion of nutritive matter, more solid texture, and retaining its juices till quite late in the winter or spring. The true Swedish Turnip is of a yellow color both in the interior and exterior, the white variety having very much gone out of use, and being entirely unworthy of cultivation.

Swedish turnips are also known as green topped and purple topped. The former is the older variety, but since the introduction of the latter has had less attention bestowed upon it and less care in selecting the seed, though equal in merit. Skirving's improved Ruta Baga or purple topped Swede is now considered one of the best varieties. Its leaves are more like the common turnip, being less smooth and more serrated at the edges, than other Swedish turnips, and it is claimed by him, that they yield a greater weight per acre of sound nutritive bulb, and are also hardier and longer keeping.

The Ruta Baga may be planted later than either of the other root crops we have mentioned, say the middle of July, and can easily be made to succed a crop of early potatoes. In this particular they have the advantage. From six hundred to fourteen hundred bushels of Ruta Bagas have been raised to the acre in the United States. The rules for successful and profitable root culture are few and simple: heavy manuring, deep plowing, thorough pulverization, clean culture, and avoid all ridging.

For the Farm Journal.

Improving Poor Land.---Field Pea.

In this age of progress and improvement in agriculture, any means calculated to improve and enrich poor land, should attract the attention of farmers generally, and when especially the means proposed are easily and can be economically put into practice.

I desire in this hastily written article to make simply a few practical suggestions relative to the use of the corn field pea, as an improver of poor land. I do so with a desire that its use may become more general and diffused, than it has been heretofore, as I am confident it will be after our farmers become more acquainted with the facility and advantage of this culture as a fertilizer.

The use of the field pea for this purpose has been practiced with the greatest success for several years past in some portions of Virginia, where farms previously very barren and sterile are now productive and in some sections rich, owing to the culture of the pea, together with a better rotation of crops.

I am fully aware however, that we are behind the age in the way of improvements in agriculture and the successful culture of the soil, (by our more thrifty and enterprising neighbors of the northern States,) but I think this discovery in husbandry we can boast of as southern origin, and that too much praise cannot be awarded to Mr. Ruffin, of Virginia, for I think he was the first to recommend the use of the field pea as a fertilizer.

The plan most usually adopted in planting the pea in

my neighborhood, when it is intended as a direct improver of the soil, is to sow them broad cast between the rows of corn at the last working of the corn, and then cover them over with a harrow or drag; the corn should be cut off as soon in the fall as it is matured properly, and then the peas grow finely, and by the time for sowing wheat, (which most usually follows our corn crop,) to have a fine coat of pea vines on the land which shall be turned under by deep ploughing, and the wheat sown down in the customary manner.

The advantages in the pea as a fertilizer are that it is of quick growth, and I may say unfailing—that is with us, where our clover is often killed out by the drouth. I do not wish to be understood however to say that the pea shall take the place of clover—far from it; I only recommend it as an improver of the land, and by this means we assist the growth of clover. Another advantage the pea possesses, is that it can be grown on the poorest land, and again it is a cheap article; the seed generally sells in our market from seventy-five cents to a dollar per bushel, and when planted in the way I have mentioned, it needs no extra work; making it, taking all things into consideration, the cheapest fertilizer in my humble opinion that can be made use of.

The pea planted in this way of course is only intended to improve the land, but when they are required for seed and to feed stock, they should be planted earlier and in a different manner. Yours T. J. W

Richmond, Va.

Profits of the Cold Grapery.

BY WILLIAM CHORLTON, OF NEW-BRIGHTON, STATEN ISLAND.

In the *Horticulturist* of February, 1852, at the request of the late A J. Downing, I gave a practical account of the Cold Grapery at this place which was planted in March, 1850, and, as the question, "will it pay," has often been put to me during the interval of time which has elapsed, I thought that an estimate based upon the produce and expenses up to the present time, might be of service in your journal. I would here premise that there is nothing extraordinary in the amount of fruit, more than what others are obtaining by skill, care and attention. The average weight of the respective crops given, if taken collectively, would be one pound per bunch, all of which would have readily sold at from fifty to seventy-five cents per pound; the lowest price, however, is only calculated. The following number of bunches of good quality have been cut in the respective years: 1851, 262 bunches; 1852, 618 bunches; 1853, 918 bunches; 1854, 1147 bunches; making a total of 2945 bunches.

The following calculation, which is as correctly stated as can be, will show the balance side of the question:

2945 lbs., at 50 cts.		$1472 50
Deduct labor, 1st year,	$50 00	
" " 2d "	100 00	
" " 3d "	150 00	
" " 4th "	200 00	
" " 5th "	225 00	
Yearly dressings of manure, at $20,	100 00	
Repairs, painting, &c.,	200 00	—1025 00
		$447 50

By the above example it will be seen that there is $447 above the wholesale market prices, and as the house, border, &c., cost about $2000, it leaves a surplus profit of 4½ per cent. per annum upon invested capital, which, in the position, looks somewhat low; but it must be understood that, in this case, profit was not the object —every thingwas done, regardless of expense, to make a good and handsome structure. The best French glass was used, and all labor paid by the day; besides which in the first year there is no return profit, and the last season is the only one in which a full crop has been allowed. Take into consideration, too, that the labor account for management is reckoned at $2 per day, and it will be readily seen that a good and suitable house may be built and tended so as to give a large return profit. A house of equal dimensions, and well finished, can be erected at $12 per lineal foot, with the exception of cistern, force-pump, hose and tank; and if we make an estimate of all incidental expenses on a house equal to the above, and fifty feet long, it will stand thus:

House 50 feet long furnished with two coats of paint, at $12,	$600 00
Brick cistern, cemented, 10 feet square,	70 00
Tank, Force-pump and Hose,	90 00
25 tons of manure for borders at $2,	50 00
Material for drainage,	20 00
90 bushels of bones, at 50 cts.,	45 00
100 bushels of charcoal, &c.,	15 00
Labor—making borders, &c,	20 00
48 vines, at 50 cts.,	24 00
	$934 00

As, in the first example, the house is 74 feet long, and, in the latter, 50 feet, the comparative weight of fruit that may be taken will be about two-thirds, or 1964 lbs., at the same prices, making the total value for five years $982; and making the same comparison in labor, expenses, &c., in both cases, we may put down $298 gain upon a capital $934, which shows a profit of six per cent. per annum, and this, too, at the commencement. If we were to calculate upon seven years, the per centage would amount to nine per cent; and continued further, it would be still greater, as the vines will continue each season to produce a full crop.

From these illustrations it will be readily seen that, with good management, there is no loss in having a Cold Grapery, even though partial failure may occur.—*Horticulturist.*

Barnum's Autobiography.

Any notice of the above work is rather inappropriate in a Farm Journal, but as Barnum has become notorious over the length and breadth of the land, by a successful system of imposture, and as his book has been circulated extensively perhaps even among the agricultural community, we copy the following extract from Blackwood to show the opinion they entertain of it in England. It is the first time in this country, that a man has dared publicly to boast of falsehood and immorality, and to inculcate before the youth of the country the sentiment that *successful* imposture is no crime. The article concludes thus:

"Seriously we have not read for a long time, a more

trashy or offensive book than this; and we should not have considered it worthy of the least notice, had we looked merely on the intrinsic merits of its contents. But it is worth noticing as a satire upon all of us; and we hope it may have the effect—very different from what its author intended—of opening the eyes of the public for some little time at least, to the shameless exhibitions which have become matter of regular trade and speculation.

If we could enter, with any thing like a feeling of zest, into the relations of this excessively shameless book, we should be inclined to treat its publication as the most daring hoax which the author has yet perpetrated upon the public. But it has inspired us with nothing but sensations of disgust for the frauds which it narrates, amazement at its audacity, loathing for its hypocrisy, abhorrence for the moral obliquity which it betrays, and sincere pity for the wretched man who compiled it. He has left nothing for his worst enemy to do; for he has fairly gibbeted himself. No unclean bird of prey, nailed ignominiously to the door of a barn, can present a more humiliating spectacle than this Phineas Taylor Barnum, as he appears in his Autobiography."

Apples of Western New York.

The winter apples of 1854 have generally been very good and choice. The country has been thoroughly canvassed for what are left up to this writing, (April 16th,) and *Roxbury Russets*, the most plentiful, are taken at three dollars per barrel. A dealer told me he was to pay one farmer $1200 for 400 barrels of them of his own raising. Wheat at $2,50, *the ruling price*, cannot pay better.

The *Esopus Spitzenburg*, *Baldwin*, and *Rhode Island Greening*, have been good, but are taken in the fall for shipment. The few left, as sold by fruiterers, I have noticed to be very fair and well flavored.

The *Canada Red* and *Northern Spy* have never been better. The last named I have seen brought in from different sources, and they are not only choice but very beautiful. I have never seen finer specimens than a parcel which a dealer obtained to retail from. They were enormous in size, high colored, and as fresh and juicy as any harvest apple. I inquired of the growers of them as to the fruitfulness of the tree, and one answered that it is only every other year that a full crop can be expected; others, that every year their trees bear.

High culture is necessary, and the same care will give a greater crop on all other trees. One person told me that he knew of a cultivator of the *Spy* who put on a plentiful top-dressing of stable manure, and the effect was that the next season his trees were loaded with high-colored and large apples, bending the branches to the ground. A large supply I find are brought to market every season, and this day the price asked by those who have them for sale *is eight dollars per barrel*, which is the only objection to the *Spy*. J. H. WATTS.—*Rochester, N. Y.*

We copy the above from the Horticulturist, and the idea has suggested on reading it, when shall we have fruit culture pursued as a *business* on farms in Pennsylvania? Not merely a supply for one's own family, but a regular crop made of *fruit*, the same as corn, wheat, potatoes. We believe every acre devoted to fruit culture in Pennsylvania, would pay a better profit in an average of ten years, than either of the others named, but it must be pursued understandingly. Is there a farmer in Pennsylvania, who would not be considered by his neighbors a fit subject for the Asylum, if he was to haul out on his orchard, "a plentiful top-dressing of stable manure," and yet we should think eight dollars per barrel for apples, one dollar and a half per dozen for pears, &c., would pay well for his manure, and allow an ample margin for purchasing Guano, Super-phosphate of Lime, &c., for his other crops.

The time has gone by when farming must be considered a mere drudgery, and nothing thought of but that interminable rotation, corn, oats and wheat. With present and prospective prices, farming must be considered fully equal as regards profit, and the accumulation of wealth, to any kind of merchandising, if the farmer chooses to abandon the dull routine of olden time, sanctioned only by *habit*, *if* he chooses to imitate the merchant in watching his market, in studying the most profitable articles for his production, if he chooses to keep regular book accounts of profit and loss, and if he chooses to use the same energy in thoroughly mastering his business in all its details, both scientific and practical.

Many years ago it used to be said that a farmer in portioning out occupations for his sons, would assign one brighter than the rest for a lawyer, a second for a doctor, and a third showing signs of activity and energy for a merchant, and poor Dick, who had always been a heavy dull boy both in and out of school, who could be a full hand only at eating molasses candy, or at the dinner table, who could only be roused to show signs of life by half a dozen claps of thunder, and whose only ambition was to circumvent a ground hog or catch a musk rat, *he* would do for a *farmer*.

Things now are changed, and to be a *first rate farmer*, in all its multiplied relations and duties, requires a high order of intellect, and most persevering habits of investigation and study.

Conservatories.

A correspondent of the *Horticulturist* inquires, if conservatories or green-houses attached to dwellings can be made successful. I can answer affirmatively, as I have had the management of one for many years so situated. This green-house is attached to the dwelling in the angle formed by the main house and back building, facing south, with the parlor windows and hall door opening into it. The roof is of tin, supported by pillars, in which the sash is made to fit, so that they may be removed in summer, leaving an open piazza. There are outside shutters. The floor is of brick, which enables you to use water freely, and retains a proper degree of moisture throughout the house. It is heated by a small coal stove of cast iron, which consumes about a quarter of a ton of coal during the winter. Hardy green-house plants do perfectly well here, such as Lemon and Orange trees, Laurustinus, Myrtle, Sweet Bay, Jasamins, Camellias, Rhododendrons, Pelargoniums, Coronellas, Primulas, Oxalis, Violets, Wall Flowers and Stock Gillies. Many of the annuals also will bloom beautifully in the spring. I call these plants hardy, as I have had, occasionally, two or three degrees of frost in the house without injury. I

consider a fire only necessary when the thermometer is likely to be below 20° out of doors. I have never perceived any dampness or unhealthiness to proceed from this house. On the contrary, it is delightful to see from the parlor windows, in cold winter weather, the Lemon trees loaded with their beautiful golden fruit, and rich dark-green leaves; and then you have the odor of the Laurustinus, Mignonette, Violets, Stock Gillies, and other sweet flowers, diffused through your dwelling.

This is, I think, the cheapest and most convenient way of having a green-house attached to your dwelling. The expense may, of course, be increased indefinitely and without any ill effects, either from dampness or unhealthiness. H. N. JOHNSON.—*Germantown, Pa.*

Philadelphia Society for Promoting Agriculture.

The *April* meeting of this Society took place after our last number had gone to press. We extract the following introduction and resolutions from the published proceedings:—Dr. Elwyn reported the death of Chauncey P. Holcomb, Esq., of Delaware, and after paying a just tribute to the memory of the deceased, offered the following resolutions, which were unanimously adopted:

Resolved, That this society has heard with deep regret, of the death of Chauncey P. Holcomb, Esq., of Delaware. His long, earnest and faithful services in the cause of agriculture have entitled him to the respect of the farmers of the country, and made for him a reputation which will long endure among all who esteem the noble art on which it rests. His liberal and disinterested feelings; his efforts, controlled as they were by a high purpose; his intentions directed ever for the public good—give him a claim to be enrolled among the patriots of his country.

Resolved, That this body deeply sympathise with the State in which he lived, with the friends to whom he was endeared, and those relatives who are left to mourn the loss they will find irreparable.

We have been furnished with the following letter comprising the substance of a verbal communication on the subject of the conversion of offal flesh into manure, by Robert Hare, M. D., Emeritus Professor of Chemistry in the University of Pennsylvania:

291 Chesnut St., June 9th, 1854.

DR. A. L. ELWYN, President of the Philadelphia Society for Promoting Agriculture,—MY DEAR SIR:—My object this morning in making a verbal communication to the Agricultural Society, was to suggest that the carcases of dogs, killed under the "dog law," so called, might be employed to carry out upon a larger scale some experiments, of which I made mention to the Society some years since, in which fish or flesh was converted into a pulverizable mass equivalent to guano.

It would only be requisite to steep the animals in a solution of about three parts sulphuric acid, and four parts of salt, and thirty of water, for from six to twelve hours, and subsequently to dry them under a shed protecting them from rain, by an anthracite fire as meat is smoked.

Preferably, the skin should be removed before the steeping, and the abdomen opened. The animals, however, might be stunned by a blow and thrown into the solution, or they might be injected with the solution by the jugular artery, and also through the gullet or rectum. Hydrostatic pressure might be made by placing the solution in any elevated position, in an upper story for instance, of any building resorted to, and bringing it down by a small leaden pipe.

When the desiccation is effected by heat, as above suggested, it may be carried to the temperature of melting tin nearly, say four hundred degrees, without diminishing the ammoniacal elements. When this heat is used, the whole mass becomes friable and easily reduced to powder, the bones as well as the flesh. Slugs roasted to this point become as brittle as glass. This fact was verified on a pretty large scale by the liberal assistance of Robert Gilmey, Esq., of Maryland, who wrote a most favorable account of the success of the resulting manure. When animal matter, such as slugs or bones, are heated in a closed vessel, the first escape of the ammoniacal elements may be detected by a feather dipped in muriatic acid, or by a very weak and almost colorless solution of blue vitriol or sulphate of copper.

Fetor is converted by wood, tar, or rosin, which may be made more active by mixing with oil of turpentine.

Sincerely, the well-wisher of yourself, and of the Society, truly yours, [Signed,] ROBERT HARE.

Horticulturist—Removal to Philadelphia.

Our readers will all be gratified to learn that the Horticulturist has been purchased by a citizen of Philadelphia, and will be removed here in time for the issue of the July number. The new editor, John Jay Smith, is a resident within the now consolidated city, and who has long been recognised as one of the most able contributors to its pages

Hereafter he will have the exclusive editorial control, and will be assisted by the many other competent pens in our city and vicinity, who have already done so much to advance the Horticulturist to its present high position, as the leading paper of its class in the United States.

Our experience with the Farm Journal is, that the large cities are the best localities for the publication of such periodicals, and we think the change from Rochester to Philadelphia a most fortunate one. The Horticulturist has not a local, but a national reputation, and Philadelphia is entitled to the place, not only as being the great central point between north and south, but also from having always maintained the front rank in its Horticultural and Floral exhibitions, its numerous private and public green-houses, suburban residences, and the prevailing taste in this direction of its population.

Ably as it has heretofore been conducted, we hazard nothing in saying from our knowledge of the new editor, his fine taste as a practical Horticulturist, and acknowledged ability as a writer, that its reputation will be fully sustained.

Reaping and Mowing Machines.—Infringements of Patents.

While the war is progressing in the Crimea, a war has also been raging within a few weeks past among the Patentees of Reapers and Mowers, and which being somewhat nearer at hand, has perhaps affected the sensibilities of our farmers and manufacturers more directly than the other.

McCormick, alleging that Manny's, and some other reapers, have infringed on his patent, in respect to the reel, side delivery, and other improvements, applied for injunctions, which have been granted, and are to come off for trial next month.

Howard & Co., the proprietors of Ketchum's Patent, have also obtained injunctions, against Forbush's machine, which was subsequently compromised by the latter paying about eight thousand dollars, and further proceedings stayed. As the principles involved in the above attachments also affected many other machines, having more or less deviations from the original Patent of McCormick, many of our farmers in this section, for fear of difficulty, have been deterred from purchasing, or at least have hesitated.

As regards Allen's Mowing Machine, and Manny's Reaper and Mower, which have been extensively sold in Pennsylvania, we are now able to state that the manufacturers have made a compromise by which a consideration has been paid for the infringement, and the sales allowed to proceed for this year.

Farmers, therefore, who have concluded to purchase either Allen's Mower, or Manny's Combined Reaper and Mower, have no occasion to be deterred by any fear of legal proceedings.

Animal Portraits.

The present and prospective rates of beef, mutton and dairy products, have brought about, among our enterprising farmers, a very general disposition to improve their stock by purchasing, even at high prices, superior animals to cross with selections of our native breeds. Correct animal portraits, giving true and desirable points in the form, for study and comparison, are often very useful, besides gratifying a very honorable pride in their owners.

The void left by Woodside, the greatest animal painter this country has produced, has never yet been filled. His figures were all master pieces, recognizable at first sight, and portraying not only true outlines of form, but *expression* and *character*. Poeta nascitur, non fit, is equally true of portrait painters. No study, or course of study, will *create* a talent of this kind. Exercise and practice will improve, but cannot originate it. A man may take and convey to canvass the form, but the *artist* alone can catch the *life*, *spirit*, and *expression*. We have been induced to these remarks, by examination of a remarkably well executed oil painting of S. Holman's Norman horse, by Clarkson, 182 Chesnut st., which he has deposited in the office of the Farm Journal for a short time, on exhibition, and to which we invite the attention of visitors. In very many particulars, it is admirably executed, and indicates a natural talent in this department, which, if properly cultivated, may result in something eminent. Clarkson has also executed oil paintings for several other farmers, and as his attention is now being much given to it, we should be pleased to see him encouraged.

L. G. Morris's Improved Stock.

L. G. Morris, of Mount Fordham, Westchester county, New York, has issued a very handsomely illustrated catalogue of his neat cattle, horses, sheep and swine, which is superior to any thing of the kind yet gotten up in this country. They were drawn by Page, and engraved by Orr, of New York, and are highly creditable to their skill as artists. Although the figures are beautiful, and almost faultless, they yet convey the idea that they are both truthful and natural, each animal having a *distinct* character. Such as are for sale have the prices affixed. He offers to forward the catalogue by mail to applicants.

Public Sale of Durham Cattle and Southdown Sheep.

J. M. Sherwood, of Auburn, New York, advertises to sell at public sale his entire herd of Short-Horn cattle, twenty-five in number, and nearly all imported, on the 20th of June. Also at the same time, seventy-five head of Southdown Sheep, many of them imported, and from the flock of Jonas Webb, and their descendants. Also a few Suffolk hogs.

We have never seen the above stock, but have long known the owner, as having some of the best animals in New York, and presume their pedigrees can be relied upon.

More Durham Cattle for Chester County.

We understand George Brinton, Jr., of Chester county, and whose fine stock, has at different times been portrayed in the Farm Journal, has recently added to his herd, a very superior bull calf from Kentucky, which we are glad to hear has safely arrived at his farm. He is of some of the best blood in the country, and we hope to furnish his pedigree for our next number. Chester and Delaware counties are going to maintain the lead in Pennsylvania for good stock.

Farmers' High School.

Before this number reaches our readers, they will very generally have been advised of the failure of the bill to obtain any pecuniary aid for the Farmers' High School from the State Legislature.

Mortifying as is the fact, it was not at all unexpected to us. The remedy for such benighted legislation or rather want of legislation is with the farmers themselves. They must send men to Harrisburg of more enlarged minds, who can comprehend better the true interest of the State. We cannot yet despair of better times, and more enlightened action.

Fine Lemon Tree.

As an instance of success in growing lemons, under the ordinary circumstances of a farm house without a green house, we may mention that our friend Mary Ann Rhodes of Locust Grove Farm, Southampton township, Bucks county, recently plucked one from her tree weighing eleven ounces. It was always a profuse bearer, and under her skillful management produces lemons of the largest size. Its place for standing in the summer is under the piazza.

United States Agricultural Society

We understand the above Society have made arrangements to hold their exhibition the coming fall at Camden, New Jersey, opposite Philadelphia, and at the same time and place as the New Jersey State Exhibition. The "Philadelphia Society for Promoting Agriculture" have not, at the time of our going to press, fixed upon

the time for theirs to be held, but it is evident there will be at least four exhibitions, not very far apart, in which our citizens and farmers all feel a deep interest. Stirring times may be anticipated. We hope the ferry boats will be found equal to the occasion, but we can but believe it would have been much better for the United States Society to have located theirs on this side of the river on the excellent grounds at Powelton, and in co-operation with the Philadelphia Society.

The Coming Crops.

West of the mountains in our own State, in the western States generally, and especially Michigan, the accounts seem to agree in the promise of an extraordinary wheat crop, the present season. In eastern Pennsylvania, and in some of the best wheat counties in New York, the very extreme cold, combined with the small quantity of snow that fell last winter, killed it, we learn, to a considerable extent.

Mowing Machines and Lime Spreaders Again.

Friend J. L. Darlington:—I notice in the April No. of the Farm Journal, an attempt made by your correspondent, Lewis Cooper, to undervalue my account (given in the March No.,) of an experiment made by my neighbor and myself with his Lime Spreader. He says, I was a frequent visitor at the shop, making every inquiry, and was referred to my *numerous* neighbors who had machines, and tried them successfully, &c.; that some men never can be suited, or don't know when they are, and thinks this is the case with his neighbor; also, thinks he never had any thing made to please him, even to a wheelbarrow; that he was cautioned not to sell him a machine; that it would do him more harm than good; that nobody could please him, and confesses he never sold a machine with so much reluctance, believing he had been properly cautioned; that he can at any time furnish certificates from at least *fifty* of my neighbors, that will testify their satisfaction in the operations of the same Lime Spreader, &c.

Permit me in reply to state, that I never was in or about his shops, except when I went to bespeak, and went for my machine; unfortunately, made inquiry only of the proprietor; never heard of the numerous neighbors he says I was referred to, but was induced to engage a machine by his, and newspaper puffs; I had never seen a machine operate, but since the publication of his April communication, I have made considerable inquiry, and unfortunately for his assertion, I can find but *three* of my numerous neighbors within a circle of eight miles who have machines, and one of them told me he could do no good with Cooper's Spreader. Another, a near neighbor of your correspondent, who had bought a half right, (the Patentee holding the other half,) says the machine is not what it ought to be; that he don't like it as well as at first, when he saw it spread, and was induced to sign a certificate; that it will not spread lime unless the lime is dry or mixed with dry lime. A third neighbor who had a machine, (belonging to a son living at some distance,) said he could do no good with it; that he had spread many thousands of bushels of lime with a shovel, but never worked so hard in his life as in punching and trying to get the lime through this machine, and that he would not give five dollars for one of them. I cannot find one person, but says, Cooper's Spreader, is not fit to spread Pequea lime, when hauled and put down in heaps in the field to slack, the usual way of treating lime in these parts. It may spread dry lime, well pulverized and clear of lumps or sandy lime, as in some parts of the country, if right well punched about in the machine.

"Nothing made to please him." Now I have a threshing machine, wheat drill, corn drill, guano sower, and *wheelbarrow*, all of which please me well, and the maker or vender never heard a word of complaint from me. So well known am I for favoring the introduction of meritorious machinery for agricultural purposes, that no less than ten patentees and venders have, within the last year, urged me to make the trial of their improvements.

"Sold to him with great reluctance." After I bespoke the machine, an acquaintance from a distance, who had a share in a Spreader, told me they would do no good; I shortly after met with Cooper, and told him, as the machine was not done by the time he promised, I thought I would not take it, would wait another year, to which he was not willing to agree, but insisted on my taking it, which I did.

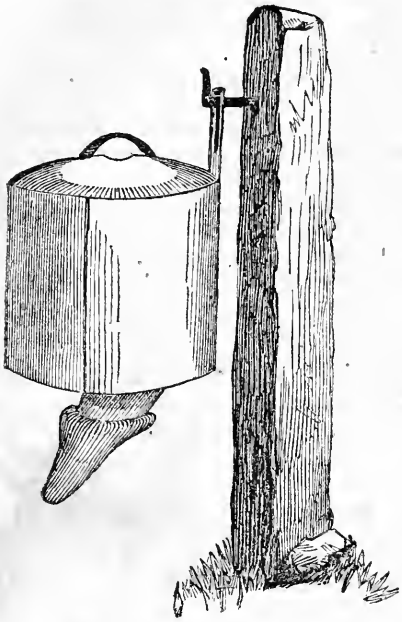
People are often induced to sign certificates to satisfy a neighbor, without seeing machines fairly tried, or without thinking properly of the injury or loss others may sustain by it. In these cases lime was generally procured when dry and in nice order, and a number collected to see the spreader operate, and then induced to certify favorably for the machine, though they never saw it tried with lime in the condition it is generally spread. Those who get humbugged by such certificates are restrained from making public their disappointment, fearing to expose themselves, or offend the venders or patentees of such machines. I am, therefore, not certain, that I will not yet be awarded a Silver Plow for breaking through this restraint and cautioning the public. As my Lime Spreader is as good as ever it was, if the patentee will take it back I will allow him to keep twenty dollars of the money I paid him.

As to the mowing machines, they are procured on fair terms, Lee, Pierce & Thompson offering to take back and return the whole of the money, if they did not answer the purpose designed. I did not return mine, and I think few, if any, were returned. They will mow and do it well, when they get the knives and some of the small fixings more permanently secured—I wish them success. I gave an account of my first trial with the mower, merely as a set off to friend Dampman's glowing account of his, and did not design to injure any vender or patentee of either kind of machines, but merely to put the farmer upon his guard. THOS. WOOD.

Penningtonville, 4th mo. 18th, 1855.

Our correspondents, Wood and Cooper, appear to entertain entirely different ideas in regard to the Lime Spreaders. Since this controversy has sprung upon us, we have made many inquiries of persons owning Spreaders, nearly all of whom spoke favorably of them. Those who did not succeed to their satisfaction stated that their lime had laid in heaps over winter, and was wet and mortary when the trial was made. We should be pleased to hear from our friends at a distance, whom we have not been

enabled to see, as to *their* experience with the Lime Spreader, and we should like some of them to permit us to insert the result of their experience in the Journal.—ED.



CALF SUCKLER.

The above cut is a good representation of an implement for suckling calves, which was exhibited at the last State Fair, and attracted much attention. It is simply a tin vessel, holding a few quarts of milk, with a gutta percha teat secured over the rim of the tube beneath. This teat has within it a valve, through which the fluid within is drawn out by a slight pressure similar to that of the calf's jaws, or of the hand in milking.

It also has a handle by which to suspend to a hook in the stable or yard, so that the calf may go to it at pleasure.

It seems to us that this simple calf suckler may be found highly useful and convenient, and save much of the time and trouble required for feeding in the ordinary way. The slower process also of drawing out the milk in the natural way by suction, rather than to drink it by mouthfuls, mixes it better with the saliva, and produces more benefit. The cheap and economical raising of calves has now become quite an object. At the prices of stock cattle it will pay better to raise even here, than to buy from the drovers. A home raised animal, particularly if crossed with an improved breed, always attains a greater weight at the same age, than if purchased out of a drove, and will always command from the butcher a higher price. Never having gone off the farm, he is also more docile and a better feeder.

The calf suckler costs about two dollars and fifty cents.

Lime Spreaders.

MR. DARLINGTON:—I see by the March number of your valuable Journal, that a correspondent, near Penningtonville, Chester county, Pa., has some grievous complaints to make in regard to certain Lime Spreaders and Mowing Machines, which he says have been puffed and blown about as superior labor-saving machines, and awarded premiums by committees, who never saw them perform. As to mowing machines, I know but little, but if he has reference to my Lime Spreader, in this respect, I will with pleasure inform him, that the assertion is without the least shadow of foundation, which I am ready to prove by the committees, who awarded me premiums; as it is well known by the committees and members of the Pennsylvania, Maryland and Virginia State Agricultural Societies, who awarded me premiums to the amount of one hundred and twenty dollars last fall, that I was not only at the expense of buying lime, but went to the trouble of making it into nearly every condition, in order to prove to them that my Lime Spreader did all I claimed for it; but your correspondent, after making a statement of the non-performance of a machine, which he had purchased, says, "one of another patent, celebrated for spreading *wet* lime, was procured, and also sent home." If this is true, it is the first instance I have ever heard of; yet it may be true.

If the machine will not spread all kinds of lime as recommended, why is it that Messrs. Chalfant, Smith, Strickland, Philips, and a host of others, who are your correspondent's near neighbors, have not discovered the humbug? These gentlemen have spread upwards of ten thousand bushels, since April, 1854, and speak of its superior qualities in glowing language. I have spread lime with one of the machines—lime that had laid in heaps for three years, and was spread in March, 1854, which is known to have been a wet month. My machines are warranted to operate as recommended, or no sale, and as long as we do this, I should think that no man has a right to cry humbug, because they happen from some other cause to fail in their use. I will add, that if your correspondent will name the day when he will have lime to spread, I will come and spread it for him, if he will publish through the Farm Journal a true and impartial account of its operation. JOSEPH W. FAWKES.

For the Farm Journal.

Trees.

MR. EDITOR:—There has been for many years an increasing attention paid to the propagation of fruit trees, but it is to be regretted that the labor is often lost by a common error: that is—allowing the grass to grow too near the trees. No young tree will grow well when a sward is formed around it. Yet in travelling our country in every direction we see this mistake.

The earth should be turned over in the spring, and in the latter part of the summer or beginning of autumn, at least three feet from the trees; then all weeds, or grass which spring up, will rot and become excellent manure for them. Thus they will grow rapidly, otherwise they often die before coming to maturity.

The importance of raising forest trees is also becoming every year more apparent, as there is an increasing scarcity of wood in all cities or towns. To propagate these also the same treatment should be resorted to as with fruit trees. In planting, the hole dug for them should in all cases, be much larger than the space necessary for the accommodation of the roots, and it should be filled with

the best earth intermixed with manure. Although an observance of this method will require more labor, it will be great gain, as the trees will be larger in seven years, than they would become in twenty if cultivated in the common way. ARBORD.

Farm Fencing.

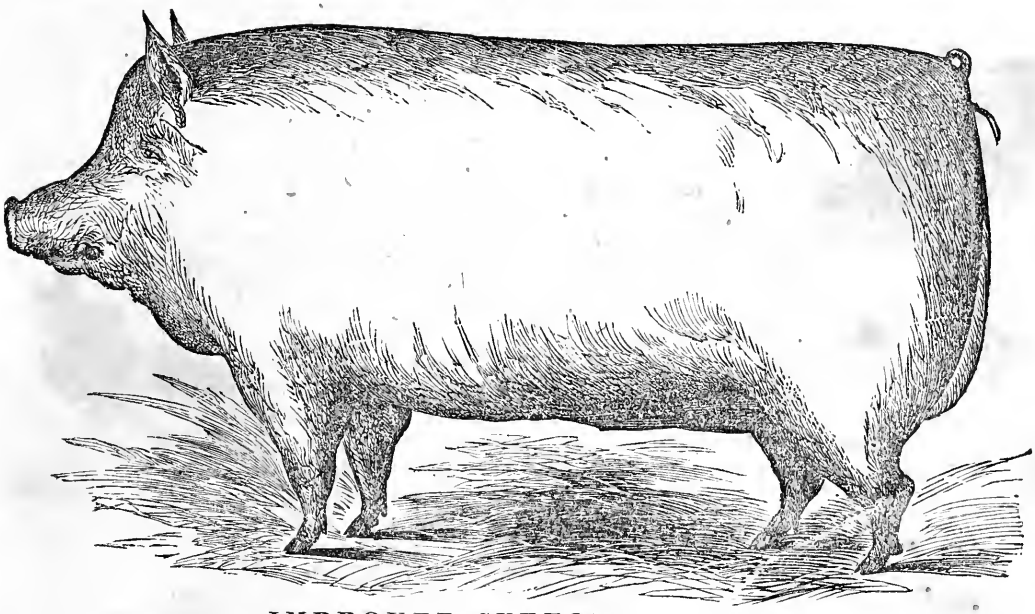
Our friend Col. Mayer, of Lancaster, in a private letter to the editor, makes the following incidental allusion to the subject of fencing. We trust he will find leisure at an early day to favor us with his views more at large on this important topic. His long experience, and habits of close observation in all matters to which he directs his attention, give great weight to his opinions.

"Having some thirty years experience in farm fencing, which time I have re-fenced the lands of my large West Earl Farm, I will at my leisure furnish you an article on that subject generally. Suffice it for the present to say that *green* locust posts will last years longer than dry. That posts of full grown sound timber *free from decay*, prove to last longer in their natural than inverted position. The reverse is the result of posts made out of old trees in progress of decay, which is at all times indicated by the dead tops, branches, decay or porosity of the butt cutt."

Lancaster, April 13th, 1855.

A Splendid Stick.

A stick of white oak timber, measuring fifty-one feet eleven inches in length, and squaring forty-one by forty inches, making nearly six hundred cubic feet, has been "manufactured" at Wallaceburg, C. W. This is said to be the largest stick of timber ever cut on the North American Continent.



IMPROVED SUFFOLK BOAR.

Bred by Dr. Morton, Etherton Farm, West Needham, Mass., for which the *First Prize* was awarded by the Norfolk Agricultural Society, at the Exhibition, 1854.

Pittsburg Horticultural Society.

We have received the premium list for the June exhibition of this Society to be held on the 12th, 13th, 14th and 15th insts. The Society "invites the co-operation and competition of cultivators. The purses are open to all, and the Society institutes for the benefit of all.

Cultivators who neglect these exhibitions, act on a very suicidal policy, while every one having a taste for the cultivation of fruits, flowers, &c., and wishing it extended, should lend a helping hand.

New York State Agricultural Society.

The Exhibition of this Society for 1855 is to be held at Elmira, Chemung county, on the 2nd, 3rd, 4th and 5th of October. The premium list has been enlarged and improved, and now exceeds eight thousand dollars. It embraces several new objects of competition, which want of space prevents us from referring to more particularly in this number.

For the Farm Journal.

Premiums at Exhibtions.

Mr. Editor:—Your correspondent T. W. in a late number of the *Farm Journal*, makes the pertinent enquiry: "Why do committees award premiums to machines and implements, which are good for nothing?" T. W. does not say to what committee he refers, but it is shrewdly suspected he had his eye on the late exhibition at Powelton. As a quiet observer on that occasion, more especially of the department of implements, to which my mechanical taste and inclination led me, I passed from machine to machine, comparing the merits of each, contrasting the simplicity of one with the cumbrous char-

acter of another, where two or more were designed for the same purpose, thus forming my own judgement, or where preconceived opinions existed, correcting, changing or confirming them, either by closer scrutiny or interchange of ideas with others of similar tastes with my own, whom I met with on the grounds. Thus I became pretty intimately acquainted with nearly all the inplements of value, formed my own conclusions as to their respective and comparative merits. and awaited the published awards, with some little curiosity. I need not say Mr. Editor, *the conceit was taken out of me.* Machines to which I would hardly have given shelter, were dignified by "Silver Medals" and others of third or fourth rate value, were assigned "first premiums."

That the committees intended to do rightly, no man can doubt,—to have "approached" them in the sense understood by the trading politicians of our Legislature, no one would have ventured—but insidious snares sometime succeed, when the open bribe would utterly fail, base metal, in other words impudent assurance may be more potent than modest merit.

Mr. Editor, if the evil ended with the award, there would be less cause of complaint, but unfortunately many men distrusting their own judgement, are guided by that of committees, make their purchases accordingly and when too late to protect their pockets, find they have been egregiously deceived, that the implement which has reached them, *endorsed by a respectable committee* is utterly worthless in comparison with others designed for the same purpose, which are passed by without a word of commendation. Another phase of the evil, arising from the honest indignation of makers or inventors, who conscious of the value of what they exhibit, and to which they invite the strictest scrutiny, find themselves overshadowed or forstalled by the effrontery of some one, who worms himself into the confidence of the committee, who perhaps yield unwillingly to avoid his unblushing importunity.

The committee on implements at the late State Fair, were originally composed of gentlemen, selected on account of their presumed capacity for the duties asssigned them, but in many instances they failed to appear and their places were hastily filled by men "honest and true" but wholly incompetent.

It is to be hoped, hereafter that the executive committee will so sub-divide the committees, that not more than an hour or two need be consumed by each, then competent gentlemen will not hesitate to act and we shall be spared the boasting advertisements which have succeeded the last show X. P. Q.

Delaware county, Feb. 15th, 1855.

For the Farm Journal.

Lunar Influences on Agriculture.

In the Farm Journal of May, I noticed an interesting article on the influences of the moon, respecting which subject I should like to present some further inquiries. I have not been able to see the number for August, 1852, referred to by Mr. Garber and Mr. Hamilton, in their articles, but I conclude that the proper time for cutting briars, &c., there specified, is the sign of the Heart, (Leo, the Lion,) in August. Several years ago, (in 1853,) I made an experiment to ascertain the truth of this belief which I had often heard expressed, though the sign recommended was different from the above, it being that of the Arms, (Gemini, the Twins.) This trial proved unsatisfactory, the bushes sprouting with equal vigor the succeeding spring. Nevertheless, I have not relinquished credence in these "superstitions," which, observed as they are and have been through all ages and in all nations, are not to be risked on one or two experiments, but on a carefully observed series.

But this is not the only or the most interesting point where the moon is said to touch Agriculture. In the sowing and reaping of grain, the planting of garden vegetables, the cutting of timber, and in the transplanting and setting out of fruit trees, many farmers still carefully attend some particular phase of the moon. On these subjects, most of which are probably known to many of your readers, I, for one, and certainly all eager for *true* knowledge, would be heartily glad to be enlightened by those who have experimented.

A few months ago, when speaking to a highly intelligent farmer of New York, he told me that in peeling oak-bark for the tanneries, he had remarked that while at some periods of the spring and summer this was very easy, at others, dependant, the workman thought, on the Moon, it was just the contrary. I suggested that perhaps it was the new cortical layer forming in the spring, which made it easy then, but he said the times in which it was so, *recurred periodically* during the season.

About thirty years ago there was an interesting article published in the Annals of Philosophy* on these influences, principally embodying the observations of a gentleman who had resided many years in South America. Here it is stated that trees are least durable when cut at full moon; the difference in timber cut at this and at the opposite syzygy being very apparent. The former is more liable to be infested with worms, rots sooner, and splits at certain periods after its fall. He also states that, (in the tropics,) the sap rises at full moon, and falls in proportion to the moon's decrease.

It is well known to farmers that there are certain nights, sometimes called "growing nights" on account of the rapid growth of the cereals in them. We are told by the traveller Dupons (Travels in Terra Firma Vol. II, Ch. VII, pp. 150 and 158,) that in the cultivation of the cacao great attention is paid to the lunar phases, the cultivators having learned their importance by careful experiment.

It is earnestly to be hoped that that the interest excited in this subject will not be permitted to die out, till we know much more about the truth than we do now. Will not some of those men who have observed the "signs" practically, tell what they are and what are their effects?

The high importance of the lunar influences has been fully recognised in meteorology, medicine and geology, so it is trusting in no mere chimera or empty superstition to we believe their power over the vegetable economy.

New Haven, Ct. D. G. B.

Several articles intended for this number are unavoidably omitted.

* Vol. X, N. S. 1825. Partly republished in the Franklin Journal, vol. 1. pp. 237, 238, 239.

Runnymede Farm, the Residence of Christopher Fallon, of Philadelphia.

We lately had occasion to pay a visit to the above farm, and as any practical illustrations of good culture and successful management tend to stimulate others in the same path, so far at least as the knowledge of it is communicated, we take the liberty of spreading a little of what we saw through the pages of the Farm Journal.

In the first place we would remark that the proprietor is an eminent Lawyer of Philadelphia, of very extensive daily business, who yet finds it both convenient and pleasant to reside with his family *out of town*, about seven miles, all the year round, both summer and winter—an example, we are glad to say, which is being yearly more extensively followed in all our principal cities by *business men*. We can conceive of nothing in this world, after a clear conscience, more desirable than precisely such an establishment as that at Runnymede farm, where wealth has not only concentrated all the luxurious appendages which wealth only can procure, both in doors and out, such as an elegant mansion, commanding an extensive view, supplied with the city luxuries of gas, made on the place, in every story, also water, heated air, &c., and outside, beautiful gardens, conservatory, greenhouses, grapery, fish-pond, fruit trees in every variety, productive vegetables—garden and forcing frames, well furnished lawn, ice-house, carriage houses, &c.; but *combined* with the above a highly improved, cultivated and productive *farm*.

In the absence of the proprietor, we were shown over the latter, and the improved stock, some of which were imported last season, by his manager and superintendent, George Drayton, whose skill and experience may be inferred from the fact, that last year he received for premiums on stock and crops, from our State and County Societies, about two hundred and fifty dollars, as well as the first premium for the largest crop of corn raised in Pennsylvania in 1854, being one hundred and one bushels and twenty-seven quarts to the acre. Runnymede contains over one hundred and thirty acres, is in high order, and very productive. It used to be managed as a dairy farm, but the cows were sold off last spring, and the object now is to sell hay in Philadelphia, and keep up the land by back loads of manure, a system pursued by many around the city, and which works well.

Many of the processes of culture, we have been so long urging through the Farm Journal, we found in *practice* here, such as *deep plowing, sown corn fodder, root culture, composting manures, thorough pulverization*, and preparation of soil, well arranged barns and shedding, constant supply of water for stock, &c.

The Double Michigan Plow was used this spring in plowing for corn, and we also observed a plentiful supply of compost in each hill, so that if the farmers in the interior are not watchful, the probability is that G. Drayton will again carry off the first premiums for corn. The operation of this plow proved entirely satisfactory, turning up to the depth of thirteen or fourteen inches. At our visit the ground was being dressed with a plentiful coat of sheep manure, preparatory to being plowed down for carrots. Several hundred bushels of these were raised last season, and fed with great advantage, some fine long orange and white Belgians being still in the root cellar, and answering well to make up for the deficiency the present spring of early pasture.

Sown corn fodder is much relied on for winter use, and was the means of allowing about twenty tons of hay to be sold this spring at a high price, which would otherwise have had to have been consumed on the farm. G. Drayton cures it successfully for storing away in the barn, by cutting it at the proper time, rearing it up along a convenient fence, and securing it from being blown down by long straw or hay ropes secured over it to the posts; after one side is thoroughly dried, these bands are loosened, and every *pannel* of fodder is then turned on the other side, and when thoroughly cured, tied up in sheaves, and hauled to the barn.

The pasture and mowing grounds bore evidence of plentiful top dressing, in their luxuriant growth. Good compost made on the place, and short manure, are relied on for this purpose more than Guano, or any of the fashionable fertilizers of the day. One field was in with Rye Grass, and a small patch with Lucerne, sown this season for experiment. The Rye Grass has been found to be very productive and of rapid growth. In all the stables, we observed care taken to preserve the drainage from the stock, by conducting it to places where none would be lost. Under the horse stables, was an extensive manure cellar, where, by raising a door, every thing could be shovelled down conveniently, and so arranged below, being on the side of a bank, that a cart could readily be backed up to haul it away for composting. The careful preservation of every thing in the shape of manure from the stables, henery, hog pen, &c., and its augmentation by judicious composting, is one of the striking features of the good management of the farm, and impressed us most favorably.

The system being now to sell hay, of course it was not heavily stocked, but the animals were all of the right kind. *Rose*, imported last season, and whose portrait was in a former number of the Journal, was in good condition, and in her fine neck, head, and horns, a model of a well formed, high bred animal. Nelly, also imported, has some very good points, but we judge had at some time received an injury on her back, behind the hips, which hurts her appearance. Her heifer calf about five months old, of a light roan color, is one of the most beautiful and promising animals we have seen for a long time, and shows the high bred Durham in every part; she combines size, with neatness and fine bone, and a beautiful head and muzzle. Drayton informed us she never sucked a cow, but was taken off immediately, and raised by hand on good sweet milk. She did credit to her keep. The young bull imported last season with the cows, not having been turned out to pasture, still had his old coat on, and was not quite in as good condition as he should have been. He has good length of carcass, breadth on back and hips, and other points, for making a fine animal when fully developed and matured.

We were gratified to find Drayton a full believer, from his *own experience*, of the correctness of Guenon's theory, by which he not only buys his cows, but also raises all his calves. The marks on the escutcheons of several cows we saw were very prominent, and indicated, what they really were, *extraordinary milkers*. We observed many other things worthy of notice, but want of space obliges us to close.

We may remark, that unlike many such establishments in the vicinity of Philadelphia we could name, where thousands of dollars have been uselessly and irremediably squandered, the proprietor of this magnificent estate has been most fortunate in his farm manager, and in his gardener and greenhouse man, Robert. Both thoroughly understand their business, and every dollar spent, and every piece of labor performed, so far as we could observe, had been done by men who knew what they were about, and had to be done but once.

There are so many ignorant pretenders, who come over from the old country, palming themselves off, especially in the department of ornamental gardening, and who have cost their employers not only in the erection of greenhouses and graperies, but in their management afterwards, thousands of dollars, that it has operated almost to create a disgust, and dread to make even an effort in this direction, by many of our wealthy citizens.

Mifflin County Agricultural Society.

An adjourned meeting of this Society was held on Thursday evening, April 5th, 1855, Cyrus Stine, Esq., President of the Society, in the chair, assisted by Thos, J. Wilson and A. Watt, Vice Presidents, and Geo. Frysinger and H. J. Walters, acting as Secretaries. The following officers were elected for the ensuing year:

PRESIDENT—Cyrus Stine, Esq., Atkinson's Mills P. O.

VICE PRESIDENTS—Hon. John Henry, Andrew Watt, Thos. J. Wilson, Moses A. Sample, James M. Alexander, and Robert A. Means.

SECRETARY—H. J. Walters, Esq., Lewistown P.O.

ASSISTANT SECRETARIES—George Frysinger and Henry Frysinger.

CORRESPONDING SECRETARY—Adam Harshbarger, Newton Hamilton P. O.

TREASURER AND LIBRARIAN—Hon. Thomas W. Moore.

For Executive Committee, in addition to officers—Samuel Kyle, A. W. Campbell, Gabriel Dunmire, James M'Cord, William Mitchell.

Officers of the Montgomery Co. Agri. Society

PRESIDENT:—Edwin Moore, Port Kennedy P. O.

VICE PRESIDENT:—Samuel Roberts.

TREASURER:—D. C. Getty.

REC. SECRETARY—George F. Roberts.

COR. SEC.:—Alan W. Corson, Plymouth Meeting P. O

EXECUTIVE COMMITTEE:—D. H. Mulvany, Jno. Kennedy, W. H. Holstein, Chas. Hirst, Jno. Schlater, Wm. Michener, Charles L. Wampole, George Krieble.

The time for holding eighth annual exhibition (1855) has been fixed for Wednesday and Thursday, Oct. 3rd and 4th.

Officers of the Bucks County Agricultural Society.

The following are the officers of this old and flourishing Agricultural Society:

PRESIDENT—William Stavely, Solebury.

VICE PRESIDENTS—Jolly Longshore, Lower Makefield; Jacob H. Rogers, Warrington; David Cornell, Northampton; Levi Buckman, Middletown.

COR. SECRETARY—Thomas Warner, Middletown.

REC. SECRETARY—John S. Brown, Doylestown.

TREASURER—Jacob Eastburn, Solebury.

To Mark out straight Corn Rows.

For corn, take a stiff sod, plough it early and deep, turn it completely, harrow until you pulverize thoroughly, plant early, and cultivate to perfection. To do this you should work your corn both ways. To have your rows straight, and spaced evenly, you must make a machine of the following description. Take a plank one and a half inches thick, say nine or ten inches wide, and eight feet six inches long, then three pieces three by five in three feet long each, throw them down thus, four feet apart, then spike said plank on the top. Out of the under side of each piece or runner cut two and a half inches and insert a tooth taken from one of your cultivators; have it extended below the runner three and a half or four inches. For handle bore one and a half inch hole in the hinder part of each runner, so as to slope back. Insert three pins or posts, and on the top put a lathe by boring one inch hole, and fasten with nails or pins and your machine is completed in less than two hours, if your materials and tools are at hand. To attach your horse, take two common trace chains or ropes about the same length, attach to the top of each outside tooth by dropping on a link in place of washer, then screw down the nut. Attach your horse with common lead or plough gears. To use this machine properly, it takes two persons, one to bare lightly on the handles and carry it round at the ends, and the other to lead the horse. To have the rows evenly spaced, have a very light pole eight or ten feet long tied under to the horse's bit so as to connect with the rings of the bit, have a mark on the pole which the leader must keep directly before him: after the first through the leader must walk in the last furrow.

The beauty of the work for the most part depends on the skill and judgement of the person who leads. In this way you have your ground checkered completely with much less cost. A CHESTER COUNTY FARMER.

Our correspondent above, also recommends getting two crops off the same field in one season by cutting the corn, in the fall in wide strips, and sowing wheat immediately. We always thought this a slovenly way of farming and not to be recommended, except under very particular circumstances. What may be called clean culture can not be made of it, and as early sown wheat has latterly been found to be the best, the corn will not be sufficiently ripened to allow of the *proper* preparation of the ground for wheat. A crop of potatoes could be ripened and got off to much more advantage, both for potatoes and wheat, than for either corn or wheat as he suggests.—Ed.

For the Farm Journal.

Large vs. Small Potatoes for Seed.

J. L. DARLINGTON:—I see a statement of Mr. C. T. Alvard, of Wilmington, Vermont, going the rounds in the Village Record, in which he says, that he has been in the habit of planting large potatoes for seed, but one year he run short of large ones and was compelled to finish planting with small ones, the largest of which was not larger than a common plum; and that he raised equally as good potatoes from the small, as he did from the large seed.

Now, if such is the case, why is it that when farmers go to select their seed-corn, they pick the longest, the thickest, the best grown, the largest grained and the ripest ears in their crib? Why not lay their refuse corn aside to plant, if they can raise as good a crop from it? Why is it that they go to their wheat field and select the best lot of wheat in the field, and put it away in their barns where they can get it for seed? Why not take the smallest in the field? The reason is obvious, there is not an intelligent, keen-sighted, reasonable farmer in the country, but who knows that such a system would be ruinous to his crops, because it is the direct road to degeneration, which, in one year might be so trifling as not to be observed, but follow up the same system for twenty years, add twenty such degenerations together and see what they will amount to. In my opinion, potatoes have sustained more damage by planting small, indifferent, half-ripe seed, and by planting the potatoe for ages without intermission, than it has by all other causes combined. The potatoe, to do it justice, should be renewed from the seed of the apple, at least, in every twelve or fifteen years. I firmly believe that planting potatoes for successive ages without renewing, and planting half-grown and half ripe seed, are the main causes of the potatoe rot and failures in the crop.

HOWARD WILLIAMSON.

Willistown, April 7th, 1855.

Guano Inspection.

MR. EDITOR:—I have long been a subscriber to your Journal, and have gathered therefrom much useful information. I noticed in the last number, among the proceedings of the State Agricultural Society, a Resolution calling for the appointment of a State Guano Inspector; of which I entirely approve, provided, we can prevent it from being sanded, after it passes the inspection.

I have been using guano more or less for the last three

years, and my method of telling its quality, is this: I push back that guano nearest the mouth of the bag so as to get a fair sample, then I wet my finger so as a little will stick to it, and taste it; if there is any perceptible feeling of grit in it, I at once condemn it as of an inferior quality, for the genuine article is very soft to the tongue, like any other slimy material would be. I am aware that tasting guano is by no means pleasant, but it is better than to be cheated.

J. B. BETTS.

Forrestville, Chester Co., March 25th, 1855.

The bill referred to by our correspondent failed in the Legislature, not because some good inspection law is not required, but on account of the objectionable features of the enormous perquisite attached to it, which would make an annual salary for the Guano Inspector of about sixteen thousand dollars. There were over one hundred applications for the office, in consequence of the rich prospect it presented. The test of Guano, alluded to by tasting, we do not consider at all reliable.—Ed.

Washing Machines.

Mr. J. L. Darlington:—In a late number of the Journal, you desire to know the merits of the different washing machines. I am unacquainted with any but Hollingsworth's Knuckle Machine, manufactured at this place by J. Roope & Co., and may be had at the Agricultural Warehouse, West Chester, after the first of March, at $9 00. This machine will do as much washing in two hours, as a woman could do in a whole day's hard rubbing on the old fashioned board. A boy twelve years old can work the machine without the least danger of injuring the finest articles of clothing; it is simple in its construction and plain in its operation. The box is one foot by two feet four inches, and twenty inches high. In the bottom of this box are placed one hundred and fifty wooden balls, two inches in diameter, which float when the water is put in; the clothes are folded and fastened into a sash which hangs on a lever above, and works down through the middle of the box, and by operating the lever the clothes are rubbed up and down through the balls, and will clean anything that soap and water will take out. Yours, &c., A SUBSCRIBER.

Pughtown, March, 1855.

For the Farm Journal.

Charcoal for Fruit.

Charcoal is a most excellent thing to put among the roots of fruit trees, especially when planting them, at the rate of a peck to two pecks to the tree. It keeps them healthy and vigorous. The coals raked out of a common bake-oven answer admirably. During the past winter I pruned my orchard, and when done I hauled the brush to an open space, kindled a fire, and "fed on" the branches until I had all consumed; this done, I had a fine pile of coals, I then took a shovel and covered them with soil, which excluded the oxygen, retained the steam arising from the ground, and of course quietly extinguished the fire. In this way I obtained from twelve to fifteen bushels of the very best of charcoal—abundance to put among the roots of some trees I was then planting. It would not do to heap the boughs and then burn them, for that consumes them altogether.

J. C.

Hermetically Sealed.

We often find this expression used to indicate an air-tight stuffing box; but it should never be employed except for expressing a closed joint made by melting the material of which the joint is composed, such as a glass tube being melted and then closed.—*Scientific American.*

Corn, Rye, and Indian Bread.

We have been resolved into a committee for a special report on this very important branch of the great culinary art, and if our readers do not understand and act discreetly in reference to it hereafter, it is not our fault.

We profess to speak, in the following passages, *ex cathedra*, and if others do not succeed in their earlier experiments, they must try again.

Corn-Bread as made at Green's, Chambers-St., N. Y.:—Take 7 pints yellow corn-meal, 3 pints wheat flour, and mix them well together; then 6 eggs, well-broken, 2 cups of melted butter, and a little salt and sugar to suit the taste. Put this mass together, and mix with milk to make a batter about the consistency or stiffness of paste prepared for drop-cake. Then dissolve three teaspoons-full of cream of tartar, and the same of soda; pour it upon the mass, stir it thoroughly, and dip it at once into pans, and bake in a hot oven.

Corn-Bread as made at Crooks', Chatham-St., N. Y.:—Take 1 quart of milk, 3 eggs, beaten, butter half the size of an egg, cream tartar, 1 teaspoonful, salt and sweeten to your taste. To this add corn-meal to make a paste about the consistency of griddle-cakes; put in pan immediately, and bake in a hot oven.

Boston Brown-Bread:—To make this article, take of best yellow corn-meal two parts; of unbolted rye-meal (the rye should be screened before grinding) one part; partially wet and mix the corn meal with hot water, then add the rye and the yeast, (hop-yeast, one pint to nine quarts of meal,) and thoroughly mix with more warm water, if necessary, to make a mass neither hard nor soft, but stiff enough to be transferred with care by the hand from the kneading trough to the pan; then let it stand till it begins to show signs of rising; put it into the pans, and let it stand a few minutes, if it is not "rising" too fast, then put it to bake; if in a brick oven, six hours will be none too many; if in a common stove or range, care must be had not to burn, and bake from three to six hours according to size of loaf. The heat should be moderate after the first two hours, but steady; keep up a scalding heat after the outside is browned properly.

Many people use three quarts or pounds of rye-meal to five quarts or pounds of corn-meal, which, we think, are the best proportions for pure New England "rye and Indian." S. D. Ostrander, Boston brown-bread baker, of this city, 378 Bleecker street, uses 2 parts rye to 4 of corn meal, and hop-yeast, adding a little molasses to a part to suit the taste of customers. Too much molasses is worse than none for most people.

But we next give the receipt which we would set forth as making a better article than all the brown-bread ever baked in the city of Boston, where, of course, bakers only imitate the "*real* original" article made by the housewives of Yankeeland. It will be perceived that we still hold on upon *milk*, and though a large proportion of this bread is mixed with water only, we go for this liquid as a valuable improvement.

Real New-England Brown-Bread:—Take equal proportions of sifted rye and Indian meal, mix them well together; add half a tea-cup-full of molasses, and two gills of good yeast, to about three quarts of the mixed meal. Wet this with good new milk, sufficient to make a dough that can easily be worked, even with one hand. For economy's sake, milk that has stood twelve hours, and from which the cream has been taken, may be a substitute for the new milk; or water which has been pressed from boiled squash, or in which squash has been boiled, is a substitute much better than pure water. But warm water is more commonly used. The ingredients should be thoroughly mixed, and stand, in

cold weather, for twelve hours; in warm weather two hours may be sufficient before baking.

If baked in a brick oven, a three-quart loaf should stand in the oven all night. The same quantity in three baking-pans will bake in about three hours.

Serve this warm from the oven, with good, sweet butter, and we could *fast* upon it every morning for breakfast, from January to December.—*Plow, Loom and Anvil.*

Plum Trees.

A correspondent of the Country Gentleman says:—"I attribute my success mainly to an hereditary strain of Yankee principle, producing a strong propensity to use a jack-knife. My trees are mostly grafted on to suckers of the native or wild plum, near or at the surface of the ground. The scions take well in such stocks, and grow strong, frequently from four to seven feet in a season. In the spring of the first year, I cut back to two or two and a half feet, and each spring following, from ⅓ to ⅔ of the last year's growth. This causes them to grow stocky, with low, bushy heads, and to set thickly with fruit spurs. I have trees in different varieties of soil; some in cultivated, some in grass land. All do well. I manure with what is most convenient, without regard to kind or quality, long or short, stable or hog manure, ashes, old lime, soap-suds, fish-brine, chip-manure, or whatever is at hand, plowed in or for top dressing.

The great enemy of the plum-tree is the black-knot. Now comes the grand question—Black-knot, what is it? Is it a disease, or the work of an insect? I will endeavor to answer these questions according to my observations. I consider it to be the work of an insect, with which I have no personal acquaintance except in the maggot state.

From frequent observation combined with practice, I find that June is the time to look for the enemy. There are no black knots then, of this year's growth, but simply swellings upon the branches. Now use your jack-knife, and you are sure of your foe. When these swellings first commence, so as easily to be found, the insect is of the exact color of the excrescence, and so small as usually to escape detection. Nevertheless he is there. From the middle of June to the first of July, they are easily found, generally two in a knot, varying from 1-20 to 3-8 of an inch in length—the largest in the mean time are leaving their cells. I have found them near by, sheltered by the rough bark, covering themselves with a thin, silk-like web. To all who wish to raise plums, (and who does not?) I would say, here lies the secret. Cut green knots instead of black ones. By following this practice, I have succeeded in raising very fine trees—not a black knot is ever seen on them. A swelling is occasionally found, but it is taken in time to secure the maggot. By this means, the insects are reduced to that degree that my trees never suffer thereby. I have trees from four to six years from the graft, from eight to ten feet high, with large, spreading heads, bearing the first season from one to more than two bushels per tree, of most splendid fruit, as many a satiated appetite can testify."

The Importance of Farm Registers and Farm Accounts.

Perhaps there is nothing of so much importance, that is so much neglected by the farmer, as the practice of keeping a diary, or farm register, and a strict account of all his receipts and expenditures. How many farmers are there within the circle of your acquaintance, who can tell how much money they have received during the year, and for what; whether the profits, if any, have been derived from their corn, hay, or wheat, from their horses, cattle, or hogs, and upon which they have sustained a loss; whether their crops have been worked in due season, and with a judicious economy in every particular; how much corn, or its equivalent, it will take to produce a pound of beef or pork, and what method of feeding will give the greatest return. I fear that, upon examination, the number found who could answer these questions correctly would be few indeed. And why is it so? One reason is, the careless and shiftless manner in which farmers generally manage every thing connected with farm work. What would you say of the merchant who followed his business in such a manner, some branches of his business being attended with a certain loss, and unknown to him, solely because he neglected to keep a strict account upon each branch? You would say, that he would be obliged to sell out, sooner or later, to save the sheriff the trouble. But the merchant, even in our small county towns, deems it indispensable to success in business to keep an accurate account of every transaction. Then let the farmer adopt such a course. Let him keep an accurate account of his receipts and expenditures, profit and loss, upon each item, and every branch of his business, or with every field. Let him carry a small book in his pocket, and daily note down the various items of work for each day, together with such practical suggestions as may occur to his mind; and, my word for it, he will find himself much the gainer in a pecuniary point of view, while he secures, also, much gratification and pleasure in a review of his labor from year to year. The farmer would then know at a glance from what crops, what class of animals, and what course of management, he receives the greatest profits, and on what he sustains loss. Would not this be a knowledge of the greatest benefit in determining his course for the future? Let this practice become general, and the benefits arising from it would soon be made manifest in the improved condition of the farming community. They would be seen in the greater interest which would be awakened in those who now follow in the same old, beaten paths which their fathers trod, and who keep no accounts except such as they record with chalk. We should then see a desire on the part of farmers to possess a "little farm, well tilled," rather than to add acre upon acre to their already large estate, which has been rendered unproductive by shallow plowing, scanty manuring, and a hurried cultivation. We should then see agriculture taking that stand which its merits demand. J. W. A.

No. New-Salem, Mass.—*Plow, Loom and Anvil.*

Durham Cattle.

TO THE EDITOR OF THE MARK-LANE EXPRESS:—The Short Horn or Durham cattle are not only spreading over every county in England, but Ireland; and the Long Horns will soon become extinct both in England and Ireland. There are many first-rate Durhams to be found in Scotland, and many fine Short Horns have crossed the Atlantic Ocean, and will soon spread all over the globe. They are a large size at early maturity. In England, the cows and heifers are worth more than any other kind for the milkman in the metropolis and other great towns. It is rare that you see a Hereford, Devon, or Long Horned cow among the milkmen in London. The best Durham oxen have thick, wide, fat backs, with a handsome frame, and plenty of lean flesh, with heavy thighs, and generally when made fat, weigh all the weights they are laid at; they are no longer than the generality of Herefords and Devons, and a great many Short Horns are as large and as heavy at three years old as the Devons and Herefords are at four. They carry plenty of tallow according to age, and the best of them have a fine silky grain, with marbled flesh. I find no beast come to the scale better, with the exception of the thickest, lean-fleshed, short-legged, polled Scots; and I have purchased many half-breds between the best polled Scots and the Durhams fed in

Scotland; these half-bred bullocks weigh exceedingly well according to size—no beast better. The Herefords have beautiful, fine-grained, marbled flesh; but many of them are light in their thighs and lean flesh, and deceive the butchers in weight, especially when they are patchy with pommels of fat flesh without, and but little tallow within. I consider the Durham cattle, take them all in all, are the best breed for the farmer or breeder for profit; and Sir Charles Knightley's Durham oxen, when cut up, are as good flesh as the best Herefords, and are worth as much per pound. When I speak of Durhams, I do not mean coarse Short Horns. WILLIAM CREASOR, Butcher.

Newport Market, March 27th, 1855.

Pennsylvania Horticultural Society.

The stated meeting of this Society was held last evening in Concert Hall. The President in the chair. The usual fine display for this month was witnessed by a throng of gratified visitors. The tables, although much extended, were fully covered with pleasing objects. Contributions from eight or more green houses were shown. In Mr. Buist's collection were *Cattleia, Mossiae, Mussaenda frondosa, Camarotis purpurea*; a fine specimen of *Nierembergia grandiflora*, and a set of beautifully grown *Pelargoniums*. Mr. Dundas' contained choice plants, among which were hybrid *Rhododendrons, Begonias, Pelargoniums*, and a superb specimen of *Cuphea platycentra*—also a dozen *Gloxinias* and blooming *Orchids*. Mr. Tucker's consisted of six select *Azaleas*, and six very fine standard plants. From Mr. Cope's were two new plants—the *Erionema, amoena* and *Escallonia macrantha*. From Mr. Lambert's were handsome *Cinerarias*. Mr. Baldwin's gardener brought *Fuchsias* and *Pelargoniums*. Dr. Rush's gardener, a large specimen of *Mussaenda frondosa*. Mr. Knorr's gardener, a fine collection of plants, some of which were new. Frederick Allgeier, choice roses. Mr. Mackenzie, a new and very fine Heliotrope "Beauté du Boudoir;" and James Ritchie cut flowers of the rich yellow tea Rose—the "Isabella Gray." Mr. Tripler exhibited a plant of the *Dioscorea Japonica*, the Japanese Igname Yam. Mr. Earl, cut Tulips. Mr. Parker, Tulips, &c. Baskets and bouquets were brought by J. J. Habermehl, Mark Hill, Jerome Graff—and indigenous plants by Meehan and Saunders, and Cornelius O' Brien. *Fruit*—fine bunches of grapes, three Black Hamburg and three Frontignac were shown by Mr. Thompson. Among the vegetables there was superb Victoria Rhubarb, by Henry Cooper, Samuel Cooper, Isaac B. Baxter and Mr. Lambert's gardeners. Remarkably large and tender Asparagus, 2 varieties, by James M. Tage, of Burlington. Early potatoes, cauliflowers, &c., by M. W. Baldwin's gardener. Mushroons from D. R. King's.

Premiums were awarded to the following, by the Committee on Plants and Flowers:—*Pelargoniums*—6 plants, for the best specimen Pelargonium, to Robert Buist;—*Cinerarias*—For the best and for the second best, to J. J. Habermehl, gardener to John Lambert. *Roses*—12 plants, for the best to Frederick Algeier. *Tulips*—cut flowers, for the best to G. W. Earl. Collection of twelve Plants—for the best to Robert Buist; for the second best to John Pollock, gardener to James Dundas. Of six Plants—for the best to William Thompson, gardener to John Tucker; for the second best to John Pollock, gardener to James Dundas. *Specimen Plant*—for the best to Wm. Sinton, gardener to Dr. Rush; for the second best to John Pollock, gardener to James Dundas. *Basket*—for the best to J. J. Habermehl, gardener to John Lambert; for the second best to Mark Hill, gardener to M. W. Baldwin. Of Indigenous Flowers, for the best to Meehan and Saunders. *Bouquet*—one pair, for the best to J. J. Habermehl, gardener to John Lambert; for the second best to Jerome Graff, gardener to C. Cope Special premiums—three dollars, to Wm. Thompson, gardener to John Tucker, for a beautiful collection of Azaleas; two dollars to Mark Hill, gardener to M. W. Baldwin, Fuchsias, Pelargoniums, etc. One dollar to John Pollock, gardener to James Dundas, for a collection of Gloxinias; another dollar to the same for a collection of Gloxinias and Orchids. The Committee called the attention of the Society to a new Heliotrope called "Beauté du Boudoir." as worthy of notice. On motion, ordered that a special premium of three dollars be awarded to James Kent, gardener to J. F. Knorr, for a fine display of plants.

By the Committees on *Fruits*—For the best three bunches of *Grapes*, the White Frontignac, to Wm. Thompson, gardener to Mr. Tucker.

By the Committee on *Vegetables*—*Cucumbers*—for the best six, to Wm. Thompson, gardener to Mr. Tucker. *Rhubarb*—for the best, to Samuel Cooper; for the second best, to Henry Cooper. *Asparagus*—for the best to James M. Tage, Burlington; for the best display by a private gardener, to Mark Hill, gardener to M. W. Baldwin; for the second best, to Wm. Thompson, gardener to Mr. Tucker; and a special premium of one dollar to J. Graff, gardener to C. Cope, for a display of Beans, Tomatoes and Cucumbers; and one dollar to C. O'Brien, gardener to D. R. King, for a dish of Mushroons.

Ordered, that a vote of thanks be tendered to A. H. Ernst, of Cincinnati, Ohio, for the gift of a copy of Landscape Gardening, by G. M. Kern.

On motion of D. R. King, "Resolved, That this Society has heard with pleasure of the purchase of the periodical called the "Horticulturist," by a gentleman of this city, and of its future location and publication here, and cordially recommend it to the patronage of its members, and that of the community generally."

Mr. Cope remarked, in connection with this subject, that due regard had not been expressed towards the original Editor of the "Horticulturist" by this community, and he hoped that the subscriptions to the fund for the erection of a monument to Mr. Downing would be speedily made at Mr. Buist's, where the book is left for that purpose.

A New Oil Plant.

The small tree(*Castiglionia lobata*,) known in Peru under the name of "Pinoncello," and cultivated about Surco, Huacho, and Sambageque, also growing wild in considerable abundance in those regions, it has been ascertained, yields a valuable oil, well adapted to the purposes of illumination. Its bean like fruit, or seeds, when roasted, have an agreeable flavor, preferable to that of the olive. When eaten raw, the etherial oil generated between the kernel and the outer skin is a strong cathartic, the effects of which can only be counteracted by drinking cold water. It has been ascertained that the seeds will grow in Baltimore; and, doubtless, plantations of this tree might be formed in many parts of the South, from which vast quantities of oil might be produced, and thus add another link to the great chain of our national wealth. The Patent Office has taken measures to procure some of the seeds of this tree for trial in the South and South-west.

Crops in Virginia.

The Fredericksburg Herald of the 7th says:—"The wheat prospect in Stafford and King George, for twenty-five miles along the Rappahannock, is unusually promising. In many fields the growth is knee high, promising an early harvest. The joint worm generally makes its appearance about the 15th. We have heard but little of it thus far.

A Psalm of Life.

BY H. LONGFELLOW.

Tell me not in mournful numbers,
Life is but an empty dream;
For the soul is dead that slumbers,
And things are not what they seem.

Life is real, Life is earnest
And the Grave is not its goal;
Dust thou art, to dust returnest,
Was not spoken of the soul.

Not enjoyment and not sorrow
Is our destined end or way,
But to act, that each to-morrow
Finds us farther than to-day.

Art is long and Time is fleeting,
And our hearts though stout and brave,
Still, like muffled dreams, are beating
Funeral marches to the grave.

In the world's broad field of battle,
In the Bivouac of Life,
Be not like dumb, driven cattle,
Be a Hero in the strife.

Trust no future, however pleasant,
Let the Dead Past bury its dead;
Act, act in the living Present,
Heart within, and God o'erhead.

Lives of great men all remind us
We can make our lives sublime,
And, departing, leave behind us
Footprints on the sands of time.

Footprints, that perhaps another,
Sailing o'er life's solemn main,
A forlorn and shipwrecked brother,
Seeing, shall take heart again.

Let us then be up and doing,
With a heart for any fate;
Still achieving, still pursuing,
Learn to labor and to wait.

Camphor vs. Pea-Bugs.

A correspondent of the Plow, Loom and Anvil says:—"Having observed in the Horticulturist an inquiry relative to seed peas damaged by bugs, I will offer a remedy perhaps not new but new to me. Four years ago last spring, my seed peas were more than half destroyed by bugs, the largest and best varieties being most injured. The summer following, I had boxes made, one for each variety, with a cover; and when the peas were gathered, I put into each box, with two quarts of peas, from six to eight bits of gum-camphor the size of a large pea, and mixed them together and closed the box. The next spring there was not a pea injured. I have pursued the same course every year since, and have not had one pea affected by bugs.

Draining.

John Johnston, of Seneca county, N. Y., gives in the American Agriculturist the following plan to ascertain whether land needs draining:—"Dig holes about two and a half feet deep in different parts of the field; put a cover over the holes so that the rainwater cannot get into them, and if they fill with water until within a foot or so of the surface, in ten or twelve hours, then his land requires, and will pay well for draining. I think I hear F. I. B., and many others say, that these holes will fill up on any land, if the ground is wet at the time. But I tell them it is not the case. You may dig as many drains as you please on dry lands, and they will never run water unless the snow is melting on the surface. If F. I. B., had stood over the making of between forty and fifty miles of drains, as I have done, he would be a better judge of what was wet and what was dry land. To the unpractised eye, land that looks dry, is gorged with water six inches below the surface."

Culture of Asparagus.

Asparagus is a plant that will bear an exceedingly rich soil, provided the manure is finely and thoroughly incorporated with the soil, and that plenty of room is needed for each individual plant, its large growth depending on this as an indispensable requisite. From our own observations we are inclined to think that for its market production, it should be in drills sufficiently remote to admit a narrow horse cultivator. A very common cause for small shoots, even in beds which have been dug and enriched two feet deep, is planting too thick or near together, and afterwards allowing the evil to be increased by the self-sowing process, numerous young plants springing up all over the bed. We would give three leading requisites of success namely—good soil, good cultivation, and plenty of room.—*Exchange.*

Origin of Potato Oats.

We have to record the death of Mr. Daniel Jackson, of Greenhill, Arkleby, Cumberland, at the advanced age of 94. He was a considerable landed proprietor in the county, and upwards of half a century since, purchased some potatoes which were supposed to have come from abroad. When they came up, among them a few heads of corn appeared, resembling the oats, then generally grown in this country, but larger and differing in appearance from the common sorts. The seed was carefully preserved, and in a few years sufficient was produced to offer it for sale. From the circumstance of its having been found originally among these potatoes, it was called potato-oats.—*Mark Lane Ex.*

Seeing the Elephant.

Passengers who travel by the New York and New Haven cars have a grand chance of "seeing the elephant." Going from New York, the cars pass the farm of P. T. Barnum, a mile or so before reaching Bridgeport, Ct. On that farm, and in plain view from the railroad, an elephant may be seen every pleasant day attached to a large plow, and doing up the "subsoiling" in first rate style, at the rate of about three distinct double-horse teams. The animal is perfectly tractable. His attendant rides him, while a colored man guides the plow. The elephant is also used for carting large loads of gravel in a cart arranged purposely for him, and in drawing stone on a stone-boat or drag, in piling up wood, timber, &c., and in making himself generally useful.—*Tribune.*

Seedling Pie Plant.

A word in time. Do not purchase Victoria, or any other Pie Plant seeds, under an impression that you will get the *true* variety, when grown from seed; for if you do, you will certainly reap disappointment. Pie Plant seed is equally as liable to "sport" as apple seed; and you may just as reasonably expect to grow a Rhode Island Greening apple by sowing the seed, as expect to grow Victoria Pie Plant by sowing its seed. About five in one hundred will be likely to resemble the parent; but a seedling, exactly like the original has never yet been grown, out of thousands of seedlings grown yearly. The Pie Plant can only be increased by divisions of the roots.—*Ohio Farmer.*

Pork.

Mr. John Bacon, of Rockton, brought to market a lot of hogs consisting of fifteen of which the following are the weights. They were one year and a half old, of the "Corn Crib breed," and all of one lot fed and fatted together. When pigs, they were fed the slop of the kitchen till a year old or so, and then fed corn till their demise:

460	490	510	540	530	504	466	506
530	582	426	456	426	478	498	

—*Prairie Farmer.*

PENNSYLVANIA FARM JOURNAL.

VOLUME 5. PHILADELPHIA, JULY, 1855. NUMBER 7.

For the Farm Journal.

Adaptation of the Lands of New Jersey for Agricultural Purposes.

BY HON. WILLIAM PARRY, CINNAMINSON, N. J.

RESPECTED FRIEND, E. C. BREWSTER:—Thy favor was duly received, relating to the agricultural conditions of Pennsylvania and New Jersey, and stating that the following assertions had been made, viz: "The State of "Pennsylvania is a better agricultural State than the "State of New Jersey, even on an average being taken "as to size;" and requesting an answer, giving my views on that subject, with which it affords me pleasure to comply.

Each State possesses some advantages not enjoyed by the other, which may be readily pointed out, but to sum up the whole and strike a true balance is a different matter.

The land in the northern part of New Jersey is of much the same character and quality as in Pennsylvania; the same range of mountains extending through each State, with this difference in favor of New Jersey, its location being between Pennsylvania and New York it is that much nearer the best market, and about as well supplied with railroads as Pennsylvania.

The geographical position of New Jersey, with reference to agriculture, has *no* rival; lying between the two commercial emporiums and near the largest manufacturing districts in the Union, nearly surrounded by the great waters connecting us with other continents, well supplied with rivers, creeks, and smaller streams, penetrating throughout the interior, many of them navigable, on which the gentle ebb of tide carries the products of the soil, lumber, grain, and staple articles, to market, and the returning flood brings back merchandise and manure to supply the farmers' wants, which gives to New Jersey great natural advantages so far as relates to carrying agricultural crops to market, but since the introduction of railroads, water communication has become less important. Sections of country that could not be supplied with water conveyance may now be better accommodated without it.

So far as internal improvements and liberal legislation can foster agriculture by facilitating the transportation of crops from distant parts to market, and carrying back fertilizing materials to enrich the soil, thereby placing the remote portions of the State nearly on an equality with the frontier farms, Pennsylvania has the advantage, more on account of the course pursued in relation to the construction of railroads than from strength of soil to support agricultural crops, for where that deficiency is found in Jersey land, it is fully compensated by the greater ease with which it is worked.

The following statement of the crops and value of land, taken from the Census Report, will serve to show the present agricultural conditions of each State.

Pennsylvania in size and population is about five times as great as New Jersey, and has more than six times as many acres of farm land improved.

	State of Pennsylvania.	New Jersey.
Value per acre of farm land,	$27	$43
Average number acres in each farm,	117	115
" value of each farm,	$3,197	$5,030
Bushels of wheat,	15,367,691	1,601,190
Average per acre,	15	11
Bushels of rye,	4,805,160	1,255,578
Average per acre,	14	8
Indian corn,	19,835,214	8,750,704
Average per acre,	30	32
Oats.	20,641,819	3,083,524
Average per acre,	22	26
Value of orchard products,	$723,339	$607,26
Average for each farm,	$5	$2
Products of market gardens,	$688.714	$475.24
Bushels potatoes,	6.032.904	3.715,25
Value of poultry,	$685,801	$336,95

It will be seen by the above that the preference is in favor of New Jersey, except for winter grain, which previous to the present high prices, had been considered of secondary importance in those sections having convenient access to market, and was sown to occupy the ground during the time intervening between a crop of vegetables and the succeeding crop of grass; frequently three crops, commencing with peas, then melons or cucumbers, followed with turnips, worth several crops of wheat, are taken from the same ground in one summer before seeding it with wheat, which is the last work before the frost closes operations in the fall. Wheat sown in proper season, I think, will yield as much per acre in New Jersey as in Pennsylvania, for the premium crops in Burlington county, N. J., have for several years past averaged more than thirty bushels per acre, and as high as forty have been raised.

The taxes in Pennsylvania press heavily on the agricultural interest, while in New Jersey they are comparatively light.

The value of land for agricultural purposes does not entirely depend on the amount of produce that can be grown per acre, but in a great degree upon the facilities for transporting the crops to market; for the cost of transportation must first be paid, as well as of tillage and manure, before the farmer gets any profit; and those States in which enterprising men enjoy the right to build highways on which to carry their produce wherever the public good requires, will, other things being equal, surpass those where this right is denied.

In this respect Pennsylvania has the advantage as an agricultural State, for, under the operation of a *General Railroad Law*, men of capital may build railroads where they will best promote the general good, by making compensation for all damages sustained by reason of their construction.

This inestimable privilege, so reasonable in itself, is not enjoyed in New Jersey; and the railroads that have heretofore been built were located without reference to the agricultural interest, and hence the southern half of the State, embracing over two millions of acres, admirably adapted by nature to agricultural purposes, and far surpassing the northern half, which more resembles Pennsylvania land, remains unsupplied, having but one railroad south of the Camden and Amboy Company's roads.

The people of South and West Jersey have supplicated a number of years for permission to build a railroad through their own fertile land, to carry their crops to market, and offered to make compensation for all damages that would be sustained thereby; but all in vain.

In consequence thereof but a small part of New Jersey is yet available for agricultural purposes.

Of over five millions of acres of land there are less than two millions improved.

Hundreds and thousands of acres of fertile land easily tilled, which by means of a railroad would be within one hour's ride of Philadelphia or New York, now remain uncultivated, and can be purchased for a less sum than the same land will rent for annually when supplied with railroads.

This land is mostly of a sandy loam on the surface, easily worked at all seasons of the year, either wet or dry, when clear of frost. Its free and mellow nature allows the surplus rains to pass readily from the surface without injuring the crops, and yet it is so retentive of moisture as seldom to suffer of drouth, which renders it more certain for an average crop during a series of years than loamy land of a stronger quality, and being underlaid with a subsoil of clay and gravel which retains manure and moisture for the support of agricultural crops, plants and fruit trees, accounts for the celebrity to which New Jersey has attained for the production of choice fruits. I have seen the premium pears of Burlington co., N. J., bring at public sale four dollars per dozen, and was credibly informed that the same pears were sold at an ice cream saloon on Chesnut St., Philadelphia, at one dollar each.

Extensive deposits of marl varying from five to twenty feet in depth are distributed throughout New Jersey, more than enough to enrich the whole State and furnish a liberal supply to Pennsylvania, when we get railroads on which to carry it.

This valuable manure in its natural state, is well adapted to all kinds of crops, and especially so for promoting the growth of potatoes, white clover and other grasses, and far surpasses the Apothecary's Patent Fertilizer.

Our most successful potato growers use marl liberally, and some of them plant from fifty to one hundred and twenty acres each of a season, and raise a better crop of large sized, smooth and handsome Irish potatoes, free from prongs or knots than could be, by the use of any other manure or fertilizer known to the public without marl.

In the vicinity of the marl districts, the custom has become general to follow the whole crop of corn with potatoes, to the almost entire exclusion of oats and barley; and hundreds and thousands of horses and mules are annually employed hauling marl into those sections where the people are not allowed to build railroads to carry it.

The sweet potatoes raised in New Jersey exceed by ten times in quantity, and are of much better quality than those grown in Pennsylvania, and their culture is rapidly increasing; many farmers plant of a season from fifty to two hundred thousand hills each; they do not require strong, rich land but yield a better crop in loose sandy soil, and in ordinary seasons yield about one hundred dollars worth per acre. A neighbor of mine a few days since informed me that owning to the high price obtained, his crop of sweet potatoes last year yielded him three hundred dollars per acre.

I consider the character and location of New Jersey soil more favorable for agricultural purposes than that of Pennsylvania, and when supplied with railroads will be the garden for raising early vegetables and fruits for the large commercial cities and manufacturing districts by which it is surrounded.

Then will the real worth of land in New Jersey for agricultural purposes become so manifest, as to give it a greater preference over that of Pennsylvania than what was exhibited in the last census report, by which it appears that the value of farm land in New Jersey is sixty per cent., or three fifths higher than in Pennsylvania; this difference now exists notwithstanding New Jersey is under an influence that prevents the construction of railroads through the best agricultural districts, and mainly on account of the natural advantages, for the people still use the same modes of conveyance that were employed by the ancients before the superiority of locomotives was known.

The land compared with that of Pennsylvania, is easier tilled, equally productive, less liable to suffer from sudden changes of wet and dry, imbibes more freely the sun and dew to favor the growth of early fruits and vegetables, and ripen them sooner for market, which gives a larger return to the husbandman.

Nature has been bountiful indeed, but in order to enjoy the full benefit of her advantages, New Jersey must keep pace with other states and allow her citizens to build railroads through the agricultural districts to develop their resources. The general railroad laws adopted in Pennsylvania and elsewhere are favorable for promoting agricultural interest, while the railroad monopoly in New Jersey is against it.

With sentiments of regard and a desire that this interesting and important subject may claim a deeper hold on the public mind than heretofore, that whatever obstructions are found to prevent the advancement of agriculture may be removed thereby benefiting the whole community, as all other trades and professions are greatly dependent for their success on its developement.

The foregoing interesting communication was elicited, as we understand, by a discussion between the person to whom it is addressed, E. C. Brewster, and another gen-

tleman of this city, as to the comparative agricultural resources of Pennsylvania and New Jersey. It was concluded to refer the matter to a committee of which William Parry was one, for examination, and we cheerfully give place to the article in the Farm Journal. A large number of our subscribers reside in New Jersey, and it is hardly less interesting to us in Pennsylvania than to them, to know that her size being considered, she is already in advance of her sister states in some important staples. In another part of our paper we copy some additional statistics from the last census, appended to the pamphlet premium list of the New Jersey State Society for present year.

We have been surprised to find the value of farm land per acre in New Jersey, rated in the census above both Pennsylvania and New York.

Rye Grass.

J. L. Darlington Esq.:—In the May number of the Farm Journal you ask for further information from me on the subject of Rye-grass. Should you think the following observations worth inserting they are at your service.

When a resident in England, I several times saw Italian Rye-grass growing, and once from necessity grew it myself, but can say little if any thing in its favor. It is of a very coarse quality and in my opinion only usable in its green state when not more than three quarters grown.

I believe the late Duke of Portland tried it, as well as all the other varieties under the irrigation system, but gave it up, and continued the best kinds of English. Allow me at this point to call the attention of those gentlemen who take an interest in agricultural pursuits, to the system of irrigation, and should they at any time go to England and wish to see it carried out in a perfect and successful manner, to make a special visit to the meadows of the Duke of Portland, at Clipstone, near Mansfield, Notinghamshire. I mention these meadows because I have no doubt many have sites in this country as well adapted for irrigation as these are.

I will now go back to the chief subject of this article.

I have not the least hesitation in saying that the Italian Rye grass is nearly if not quite as great an exhauster of soil as Timothy, besides which, it leaves a root which it is scarcely possible to get clear of again. I have also but little if any doubts that it is the wild variety from which all those named as English have been propagated. One who is fully conversant with botany, could, I presume decide that point, and also whether the Ray-grass spoken of in the American Agriculturist, is not this variety with the name changed to Rye. It posseses many of the objectionable qualities that are mentioned as belonging to the orchard grass of this country.

As I have never turned my attention to practical agriculture in this country, having chiefly led a city life, I am not aware that I have ever seen a specimen of the orchard grass spokon of. Perhaps some of your numerous readers would kindly send a few stems with roots attached, to your office for inspection.

The growing of grasses of the best varieties is of such importance that no pains or expense ought to be spared to ascertain which are the best.

As to the comparative value of the Italian and English, I can only say, I would never grow the Italian if any other could be procured. It was by a partial failure of a plant of clover, and that so late in the season, that English was not to be had without sending to a great distance, and every day I lost being of great moment, that I very unwillingly sowed the Italian, and greatly to my disappointment found it had smothered what clover there was, and I was left with a crop little better than wheat straw. Had it not been a fine season for securing it, it would have been worse and fit for nothing except bedding, and that of a very bad description. At any time I would rather have good Oat or Barley straw than the best secured Italian Rye-grass. Had I been fortunate enough to have got English I should have saved my clover and had a very large quantity of superior hay. If I were so situated again, although it might be at a season when some other crop would have to be neglected for a few days, I would sacrifice what clover remained, and plough the land, and sow either Tares or a good variety of Pea. This would leave the land in an ameliorate condition and fit for growing a fine crop of wheat.

I am certain it would repay, gentlemen, to encourage the importation of all the varieties of English Rye-grass, and give them a fair trial so as to ascertain which is the one best adapted to this climate.

Do not let that extraordinary statement made at one of Mr. Mechi's, agricultural dinners (in England) by a Mr. Cird, and commented upon in the May number of the Journal, induce any one to try the Italian Rye-grass. I will let the twenty tons per acre, be it grass or hay, answer for itself, but must inform those who are ignorant of the fact, that the Scotch acre is one fourth larger than either the English or American. There is one other statement made by the same gentleman which I cannot let pass; and that is where he mentions that it was "cut ten times from March to December." I think any gentleman who is in the least conversant with the climate of Scotland will agree with me, that there could be but little got from the mowings that took place in the months of November and December, and also that the "humid climate of Scotland" must have been a great preventative to its being made into hay that cattle would eat. I also think two or more of the first cuttings, even if abundant, would be exposed to the same fate as those of the months of November and December.

The experiments that are being constantly made upon the "Tiptree Farm" (as Mr. Mechi pleases to call his property) and the good dinners given by that gentleman, are the source of startling statements as to what is, and can be produced per acre. It is very rarely that three crops of hay are secured in a season in the south of England, where they have many more bright and clear days than in Scotland. Yours truly, JOHN WM. GIBBONS.

Philadelphia, June 11th, 1855.

For the Farm Journal.

Intellectual Improvement of Farmers.

The winter is past and the vernal sun is again shedding his balmy influence over the hill, the valley and the lawn; the feathered songsters are now cheering us with their notes of thanksgiving, and the groves are becoming redolent with the foliage and flowers already bursting into life.

Thus pass the seasons away, calm follows the hurricane and sunshine succeeds the blackened sky. This is the order of nature, and ordered by nature's God, and therefore must be right. Nor is this state of things confined to the works of the Divine Architect as applied to the material world—and *he* must be an inattentive observer of the times, who does not see the same vicissitudes in the affairs of man—for awhile the smiles of fortune seem to attend his every movement—does he invest his money in houses and lands; they rapidly increase in value—does he engage in mercantile pursuits; his business is equally prosperous; and even should he purchase stocks, they shortly double his investment, when, Nebuchadnezzar like he exclaims, "see what *my* skill and wisdom has produced." But the top of the ladder is reached, many of his stocks become worthless, and the balance yields him little interest; his goods are sold to the distant merchant who unable to collect his debts cannot possibly meet his engagements; and even his real estate after paying the increased taxes with diminished rates affords him but a trifling income.

But this is all right, and man in his free agency is permitted to work out his own cure; he now sees that every good and perfect gift comes from above; that his ingratitude is justly punished; and even those who have innocently become the dupes of the speculator, readily acknowledge that all is right. For while they would be unwilling that any of the human family should suffer from want of the necessaries of life, they are quite free that many of the luxuries should be withdrawn; while they wish none to exert themselves beyond their ability, they believe it right for all to be actively employed; and they feel fully assured that by exercising what the Germans call the Vier Haupt Tugender (the four cardinal virtues) Temperance, Justice, Prudence and Fortitude, with a perfect reliance on the goodness of an overruling Providence, that all things needful will be added.

While I have given a rapid sketch of the thickly populated part of the community, there is a class, the very bone and sinew of every country, who, moving in an humble sphere have passed unscathed by the whirlwinds which have prostrated so many in the higher walks of life. This class is, "The Cultivator of the Soil," and to these I would now address a few remarks. While the world is dependent upon us for the very food which sustains them, let us not boast of our independence, for they also furnish us with many of the comforts of life; therefore a reciprocity of favors contributes to the happiness of the whole.

But let us not rest satisfied with our profession as we find it, but each one endeavor to add something to its improvement; and to do this we must read, think and work. I hear some of you say "what time have we to read?" Our daily avocations continue till night, and then we want rest and sleep. But stop my friend, for he who labors from five till eleven and from one till seven in summer, can very well spare himself two hours at noon for reading and rest (unless some emergency press him,) and the winter affords him much precious time.

But books are expensive! True, it would require a considerable sum to *buy all* that might be wanted, but to avoid this let us establish libraries in every neighborhood, of well selected works, a part of which should be on Geology, Mineralogy, Entomology, Chemistry, Agriculture, Horticulture, together with the best periodicals of the day, both foreign and domestic, which would give us all the improvements that are annually made not only in our own country, but throughout the world. And as to the strange prejudice that exists in some sections of the country against book-farming, as it is called, I would have you discard it at once; as well might the hardy mariner have rejected the introduction of the compass in navigation, declaring himself satisfied to do as his forefathers had done; or the ancient scribes have rejected the use of the type in expediting the circulation of knowledge over the world.

That we are not bound to believe all that we see in print is very true; and here comes in the exercise of the second requisite in the improvement of our profession; we must think for ourselves, but before we can think correctly we must have the *facts* collected, "for how can we reason but from what we know."

Therefore if we lay down something like the following rule, which I think guided the great Newton in his researches after truth, we shall seldom be deceived in our conclusions, viz., "no more causes of natural things ought to be admitted than are true and sufficient to explain the phenomena—therefore effects of the same kind will always be produced by the same causes." M. B. S.

Philadelphia 5th mo. 21. 1855.

Native Oaks.

For the Farm Journal.

Mr. J. L. DARLINGTON:—I observe in the April No. of the Farm Journal, an article on our native oaks; and as you request some of your readers to send you the measurement of any unusually large oak trees in their neighborhood, I have now growing on a wood lot on my farm in Springfield township, an oak, a swamp oak, that measures twenty feet in circumference around the trunk at the height of two and a half feet above ground, and is upwards of eighty-five feet in height. It is a beautiful straight bodied tree with but a small top; several of the largest limbs have been broken off a number of years ago, and it is sending out a fine new growth of limbs, commencing some forty-five feet above ground. It is growing on a kind of bottom soil; the timber in the neighborhood immediately around, is not so unusually large, but is composedof almost every variety, white oak, red oak, elm, hickory, poplar, white ash, chesnut, maple, cucumber, sassafras, dogwood, wild plum, spice-wood, grape-vine, and linn-wood. Yours, with respect,

Mercer, Pa., April, 17th, 1855. J. A. NELSON.

Agricultural Periodicals for Premiums.

We observe, that the Ohio State Board of agriculture, have resolved to distribute four hundred copies of the two Agricultural papers, published in that State, to competitors at the next State Fair. This is a wise liberality, and shows a proper appreciation of the great benefits to agriculture, by the circulation of such periodicals. We can hardly hope for such action on the part of our State Society or its Executive Committee, and yet we believe there is no plan, by which they could accomplish so much good throughout the State, with *so small* an outlay. The Farm Journal is now in its fifth volume, and

we believe has aided very materially to awaken a spirit of improvement among the farmers in Pennsylvania, where it has its chief circulation, and has been no inefficient adjunct to the efforts of the State Society. It has however received no assistance from the latter, and has had to rely on its own efforts and resources. We have never *pushed* our own claims, but still believe if the State Society were to subscribe for, and circulate one thousand copies annually, it would be the means of disseminating much good, and redound to its own advantage. There is no State in the Union in which agricultural papers, are so poorly supported as in Pennsylvania.

Ground Food for Stock.

Few persons seem to be aware of the importance of grinding every variety of grain before feeding it to animals. In fattening any kind of animals, it is all important. There is no animal's stomach that can digest any variety of grain with a cortical covering. All animals that swallow a single kernel without crushing, void it whole; and what is singular, after passing the ordeal of the gastric juice, the heat and digestive organs of the stomach and the whole intestinal canal, the seed will still germinate and grow. Horned cattle are not careful chewers of their food, as they depend upon rumination to comminute their food properly, in which grain, meal and roots. are never brought up to undergo that process. The hog is a notorious gormandizer, and scarcely chews at all; and it is said that of three hogs confined in a narrow stall, and only the first one fed what corn he can eat, the middle one will fatten fastest, and the last one keep in good order. The horse masticates better, but age and hard fare often disable him from performing such duty as is required to render his food fit to produce the nutriment it contains.

The stomach is a macerating vessel where all the food is intended to be dissolved, and its nutritious parts to be taken up and carried to the blood, to be distributed and deposited on all the tissues. The period that all particles take in dissolving, is exactly in proportion to their bulk. A cube of salt or of loaf sugar, if divided in two, will dissolve in water in half the time it would whole; as will metals in acids, or ice in the sun

In every point of view, therefore, either for profitable expenditure or speedy fattening of animals the grinding and comminuting the food has nearly one half the advantage over the ordinary process; and, if cooked, saves the stomach and its complicated organs and nerves, the exertion of cooking it there—as cooked, it has to be, before digestion. It is the opinion of close observers that fully one half the expense of sustaining and fattening is saved.

In feeding horses and cattle, for simply carrying them through the winter, if what grain they are entitled to was ground and the hay or straw cut, mixed and properly moistened, the saving would amount to quite an item —every inch of hay or straw will be eaten and nothing lost. Two-thirds the quantity now fed in racks for the horses to pull under their feet, and that fed to cattle on the ground, and trodden down and spoiled, would suffice to carry stock through the winter. But habit is everything; it is stronger than the ties of family affection, the good-will and confidence of the world, or the hope of salvation, as is evinced by the inebriate—and it holds good in all the duties and actions of life. If we had been habituated from our youth to cut, cook and prepare food for our valuable animals, the most beneficent gifts of the Creator, should we not look with astonishment at the practice of waste and mismanagement now in general use!

In England, where necessity teaches people wisdom—where ten to twenty dollars rent is paid for an acre of land—they manage things differently. In that country, where the best work horses in the world are kept and the fattest animals are sent to market, every particle of food is cut and ground; and horse's food often baked into loaves. Their experience has settled the most economical process and necessity enforces it. Our whole system of feeding is wrong. The under-cover stall feeding is the only true one, both as respects the saving of provender, the comfort of the animals, and the value of the manure.—*Rural New Yorker.*

An Experiment in Soiling Cattle.

I very much regret that, in reply to your inquiries. relative to my experiments in soiling stock, I am not able to give you a more detailed and satisfactory statement, yet the little experience which I thus far have, has been so satisfactory to myself, that it is most cheerfully communicated, in the hope that others may be induced to give it a trial, for I am aware that any particular process in farming, to be generally valuable, must stand the test of repeated trials, made under the various circumstances which modify the results in different regions.

During the summer of 1854, my stock on my home farm, consisted of a span of horses, one yoke of oxen, a three year old short horn bull, fifteen cows and twelve calves.

As I wished to break up the greater part of my old pasture, and could not well appropriate other lands to that purpose I resolved to make up the deficiency by feeding in the stable all except what they could graze upon a six acre lot of old pasture.

For this purpose I sowed four acres of corn in drills, three bushels to the acre; part of it as early as the seed would come, and all before the first of June. The land was in good condition, having been plowed deep and well manured; and if cured, the yield would probably have been from four to six tons to the acre. In addition to this, before the corn was fit to cut, a little less than two acres of clover was fed green to the stock, making in all say twelve acres of land, upon which the above stock was well summered, and in fact were in much better order in the fall than most herds in this region in consequence of the short feed occasioned by the severe drouth.

The teams and bull were constantly stabled, and received dry hay till the first week in June, when they were put upon green cut clover; but to prevent their scouring, as well as the cows, when first put upon it, a small portion of dry hay was mixed with the green clover for a few days, when it was gradually abandoned.

During the flush of feed in May and June, the cows grazed a large portion of their food from the six acres of pasture, the deficiency being made up in dry hay till the clover came.

Perhaps it required two weeks longer keep in the spring on hay, than if the cows had been turned upon an abundant pasture. They were stabled nights, being put up before milking, and not turned out till after milking the next morning, and received evening and morning as much clover as they would eat, till about the 10th of August, when the first sowed corn had got its growth, and could be cut without loss. Upon this they were fed till near the first of December, when the corn raised on the four acres was gone. That portion of it standing when frost came, was cut and cured in small bundles set up in shocks, upon which the cattle fed nearly as well as when green.

The corn sowed was the common yellow, but this spring I am going to sow sweet corn, which I am sure will produce a heavier growth, and much better quality.

The cows thus fed, gave a larger quantity of milk than they have ever done upon pasture alone, and did not shrink it, in the fall, from the drouth as if pastured. This was very favorable to my calves, with my mode of rearing them, which is upon skimmed milk and buttermilk with a little meal in it, which they receive as long as the cows give milk in the winter; for the amount of milk for them did not diminish as it would, had the cows been pastured alone, and shrunk of their milk in the latter part of summer.

My cows are of the largest class, being thorough bred and grade short horns, none of them less than fifteen-sixteenths Durham, and would require as much feed as any class of cows.

The only drawback is the labor required to feed and care for the cows. This will amount to about two hours extra labor per day, say $1.00 a week, or $30.00 for seven months. But this is much more than compensated in the greater amount and better quality of the manure made and saved in this way. for cow's manure, dropped about a pasture in summer, spoils nearly as much grass the first year, unless it is taken up and carted off, as it augments the growth the next year.

In order not to mislead any one, it should be added that to feed so many cattle from so small an amount of land, it must be in a good condition, rich enough to yield at least three tons of hay or a hundred bushels of corn to the acre. Respectfully yours, *Alpheus Morse, in the Country Gentleman.*

Corn and Cob Meal for horses.

One of the editors of the Michigan Farmer has been experimenting on corn and cob meal, as horse feed, for a couple of months, exclusively, and with the following results. After one month's feeding, febrile symptoms were occasionally observed in one of the horses, such as short and quick breathing &c.

On stating the case to Dr. Dadd, the skillful veterinary surgeon of Boston, it elicited the following valuable letter. The importance of occasional change of food which it recommends, is not sufficiently attended to by our farmers in feeding their stock.

"As regards your horse, I would (if he is no better) change the diet immediately. He is probably suffering from acute, or perhaps *chronic* indigestion, which is very apt to occur in animals when kept too long on one kind of diet.

No facts in dietetics is better established than that of the impossibility of long sustaining health, or even life on one kind of diet. It fails to support nutrition. (See Liebig and Carpenter.) The animals experimented upon, after a certain length of time, seemed willing to endure starvation rather than live on one kind of diet. As regards the adult horse, however, he will exist for some time on highly nutritious articles, such as oats, barley, corn meal, &c., but they finally induce febrile diseases such as *laminitis* (inflammation of the foot,) rheumatism, founder, &c. They do not require so much of the flesh-making principle as the young and growing animal, which not only requires sufficient carbon in the form of food to renovate the tissues, but also enough for growth and development.

The adult, however, requires a greater *variety* of food than the latter, to support the integrity of his organization, consequently as you have fed your horse on *corn and cob meal all winter,* there may be a disproportion between the amount of carbon, (in the form of food,) and the oxygen respired, hence his digestion must be deranged, or carbon, in the form of fat, is deposited in the various tissues.

A fat horse, of course you are aware, is not the one for fast work nor fatigue, and, the emaciated excepted, is more likely to become sick, from the least exciting cause.

On the other hand, an excess of carbonaceous material deranging the stomach—it holding sympathetic relation with the brain—is apt to terminate in staggers, &c. It should be known to horsemen that an adult horse ought not to increase in weight from year to year; the food may be proportioned to work, any increase of flesh or fat, is a signal to dip a lighter hand into the meal bag; that is, if you want to keep disease and death at bay.

It pays to fatten *cattle, sheep* and *swine,* because the result, is dollars and cents, but you may depend that it is losing a spec to fatten horses; for among such I have the most practice, their disease being more difficult to control than when occurring in others, in fair working order.

As regards *corn and cob meal,* I think it operates injuriously on a great many horses.

In the first place they do not always masticate it properly, it being soft and easily insalivated, they are apt to *bolt* it, as the saying is, it then runs into fermentation, resulting in flatulent or spasmodic cholic.

In order to obviate the difficulty, the meal ought to be mixed with cut hay or straw, articles that must be masticated ere swallowed. Should the digestive organs be deranged, meal ferments very rapidly, inducing flatulency.

I should not object to giving a horse a feed of corn and cob meal occasionally, mixing it with cut hay and a little salt. Salt is a good antiseptic—prevents fermentation—affords by the decomposition in the stomach, muriatic acid and soda; aids digestion and prevents the generation of worms.

The best remedies for restoring the digestive functions are:

Powdered Gentian,	1 oz.	Powdered Ginger,	½ oz
do Salt	2 oz.	do Charcoal	1 oz.

Mix, divide into eight parts and give one with the food, night and morning.

Seeding Thick or Thin.

The following from one of our foreign exchanges, contains assertions, which will be rather startling to many farmers here, where thick sowing is generally adopted and preferred.

Experiments on a small scale to test their truth should be made the coming fall, and next spring.

"Repeated experiments have proved that the capabilities of grains of corn, whether Wheat, Barley or Oats, are only to be known by planting early, thinly and singly; and in order for the full development of each grain, whether on poor or rich soils, it requires to be planted at least 3 feet apart square. Although the notion of planting at this extreme distance may be ridiculed and pronounced illogical by thick seeders, yet we contend that by judicious management on good and well prepared soils, and by planting early in September, each plant of Wheat thus treated will invariably not fail to produce 4000-fold, and half a pint of selected seed is thus sufficient to plant 1 acre, and as a natural consequence, it is, of course, quite possible to obtain a produce of 4000 half pints, equal to 31 bushels, and 1 peck per acre, quite equal to the average yield of the United Kingdom, from the opposite extreme and ordinary practice of sowing 256 half pints, or 2 bushels of seed, and sometimes more to the acre. Anomalous as this may appear, yet it is certain, and defies irrefragable evidence to prove the contrary, that whilst 4000-fold is thus obtainable from a half pint of seed, not 30-fold is nor can possibly be obtained from a full crop of 256 times the quantity, by reason of its extreme thickness; for, were it so, 30 times 2 bushels would be the average yield, viz., 60 bushels per acre! If our agricultural friends will take the trouble to plant, or thin small plots of their wheat to about 6 inches by 12 apart, or about 18 plants to the square yard (the distance we believe proper for obtaining the fullest crops) their expectations will be fully realized. As the season is now too far advanced to prove the correctness of this statement on Wheat crops, if not already done, we do trust that some unprejudiced farmers will take the trouble to plant, transplant, or thin singly, about a rod at least of their Barley or Oats crops, in the middle of their fields, when it has been up about a fortnight, and afterwards keep it clean by hoeing it deeply with a hack hoe; then all their doubt of the reasonableness of this expostulation will be removed.— *Hardy & Son, Seed Growers, Maldon, Essex.*

Grasses for Lawns.

The extreme beauty, evenness and velvety softness of English Lawns, have been the theme of admiration of all travellers, through the United Kingdom. In our landscape gardening, these lawns are the models we strive to equal, no arrangement of trees and shrubbery and otherwise picturesque location of buildings, producing the proper effect, without a well set, compact and even sod of green grass. It is but *seldom*, in this country a lawn or grass plot, either large or small, is to be seen what it ought to be and what it may be. The difference in this particular, between here and England is partially owing to her more moist and humid climate, but more to other causes we shall now advert to and first and most especially the determination in this country to do every thing fast, to make excellence, beauty, durability, in nearly all cases subservient to speed. We do not take the time, and will not incur the expense, in our agricultural and horticultural operations, as well as in other branches of business, to do things well, but only wish to do them soon.

In England the formation of a good lawn, intended to be permanently laid down to grass, is considered an expensive operation and one requiring the greatest skill. The subsoil is first, if it requires it, thoroughly drained, and the surface made entirely level. Subsoil or trench plowing is of course adopted, to guard against the effect of drought, and the greatest care taken during the process of levelling and preparing, to give it a *uniform* foundation at a uniform depth, particularly to make the upper six inches, every where the same, and of a uniform stratum of good garden soil. In this way they avoid the uneven spots, hills and hollows, which so disfigure our own lawns, and make a variety of tints in different parts.

A mistake is often made here, in having the soil too poor to produce a constant and luxuriant growth of grass, levelling being often done with the earth out of the cellar of the building just erected. We would recommend, after plowing to the depth of ten to twelve inches, if the soil is thin, it should be covered with a plentiful coat of good barn yard manure, to be plowed down to the depth of five inches, and the surface afterwards covered with good surface soil, at least a couple of inches, to serve as a recipient seed bed, for the young grass seeds.

Much of the outlay may be reduced, where circumstances admit of taking off previously to laying down the lawn a crop of potatoes, or other roots, which have the effect of making the soil mellow and friable. Previous to seeding, all stones must of course be picked off and the harrow passed over repeatedly to pulverize all lumps and reduce all inequalities.

The fall of the year is decidedly preferable for forming a lawn, and it is a great advantage to sow at the same time with the grass seed,—a small quantity of rye, wheat or oats, for protection during the winter and succeeding spring, but which must be mowed off, when six or eight inches high, to avoid any interference with the growth of the grasses.

The quantity of grass seed used to the acre for lawn purposes is much greater in England than many persons seem willing to incur the expense of here. Out of six different mixtures of lawn grass seed, recommended for an acre by some English authorities, we find not one to contain less than forty pounds. The last spring there are some lawns near Philadelphia, we could point out, where only *ten* pounds of seed were used, and that merly *raked in* on a hard and sterile seed bed of clay or gravel, which had neither been dug or plowed up, and and yet the proprietors are greatly dissappointed, that by *this time*, the plot has not attained the velvety softness and compactness of an English Park. The cause is of course attributed to our unfortunate climate.

As there is no use in more than enough, we would say if the ground is properly prepared, and the above precautions attended to, twenty to twenty-five lbs. of seed are sufficient for an acre.

The *kind* of grass seed for an American lawn or park, we have a very decided opinion about, and can speak

from some experience. We would discard entirely, all the crested "Dog's tail avena's and Fescue grasses," of England, as entirely unnecessary and useless here. The very best quality of compact sod can be obtained by sowing equal parts by weight of Poa Pratensis, (Green or Blue Grass,) Trifolium Repens, (White Clover,) Lolium Perenne, (Rye Grass.) We prefer this to any mixture of other grasses. After being once well set, it should be remembered that a lawn can only be *kept* beautiful, by repeated mowing, and occasional top dressing, and cleaning with an English lawn rake, which are made expressly for this purpese. In England they are also regularly swept with a broom at stated periods.

For *good mowing*, an English rivetted back lawn scythe is also indispensable.

Osage Orange Trees.

Mr. H. P. Byram, the editor of the Louisville Journal, writes to that paper from Dayton, Ohio, under date of September 9th, 1854:

In the vicinity of this city I saw some of the most perfect specimens of the Osage Orange that I have ever before met with—more perfect, indeed, than I supposed nature could produce, even with all the aid that art and industry could lend her. The plants seem to withstand the blighting effects of this unusually dry season, better than any other species of vegetation. The leaves still present the most rich glossy green that characterizes this plant in our most favorable seasons.

From a somewhat extensive acquaintance with the character of the Osage Orange plant, I have often pronounced it the hedge plant of America, but I had no idea of the degree of perfection to which I find it susceptible of being trained in the hedge. The oldest of the hedges here now is about four years. It is four feet high, and three feet broad at the base, and as dense, compact and uniform from the ground to the top, as if it had been moulded by hand from some plastic material. My attendant remarked that is was "so close at the bottom that a snake could not find its way through it." There were several other specimens in the same vicinity, from one to two years old, all presenting the same beautiful appearance.

The great and only secret in producing this living American prairie fence is, *clean culture for four years, and a relentless, unsparing shearing*, from the period of setting the plants to the end of four years, and then to maintain it in its proper form by semi-annual clippings.

A Mode of Repelling the Apple Tree Borer.

I have suffered from the effects of the "Apple Borer," having lost some *seventy beautiful trees* during the space of three years. I made use of all the preventives suggested by others that I could get hold of, but all to no purpose. I came to the conclusion *four years since*, that the tree must be protected by a covering in order to prevent the little animal from making a deposit. My process was this, and so far successful to the extent of the covering. Early in May, which is the proper time for this region, I examined every tree, and if nits or grubs were there, I followed them with a knife and removed them. I lifted the earth from the collar or base of the tree to the depth of two or three inches, and made use of worn wool bags, of little value, for wrappers which, when cut into strips, are very convenient. I commenced two inches below the surface and wound the extent of two feet, giving the tree two thicknesses of sacking and securing the same with slender twine. I then replaced the earth, and the work was done for the season.

It is necessary to loosen the sacking or covering early in May every succeeding year, and wrap the tree again as above stated. When the animal is prevented from piercing between "wind and water," its favorite haunt, it examines for some vulnerable point, but his depredation above the protection, with me, has been exceedingly rare, and when committed, easily detected. Should it be necessary, it is an easy matter to wrap the tree to and around the forks, as there is nothing effectual short of a complete protection.

Since pursuing the above course, I have not lost one tree that was not too far gone to recover, and *no new deposits* under the covering has come to my notice. WM. McKIE, *Salem, N. Y.—Horticulturist.*

Horticultural Novelty.

The agricultural branch of the Patent Office has taken steps to procure seeds of the bunya-bunya, a tree of the fir genus, which grows in Australia, and bears a cone nearly two feet in diameter, filled with seed of the size of an olive, and of flavor more rich and delicate than that of the pine apple.

There have recently been imported from France the cuttings of several varieties of the prune, which have been distributed by the Department in Maine, New Hampshire, Vermont, Northern New York, Michigan, Wisconsin, Minnesota, and several points on the Allegheny mountains, to be engrafted on the common plum tree.

Keeping Furs in Summer.

About the 1st of April, or on the approach of warm weather, lightly whip, comb and brush your furs till they are perfectly free from dust, sprinkle them with a little spirits of any kind and wrap them in clean linen. Put them in a tight box or drawer, and keep the air from them as much as possible. In this situation they may remain ten or fifteen days, when they ought to be examined and the whipping, combing and brushing repeated.

The insects most destructive to furs, are, first, the black bug which infests smoked meats, &c. It appears and deposits eggs early in the spring. This kind of moth does not eat the fur, but preys altogether on the skin. Next, the small ash colored miller, which produces the moth that destroys all kinds of woolen stuffs, and may be seen hovering about the candle on a summer evening. This kind particularly preys upon and destroys the furs, and ought to be most guarded against, also the mite, which are very numerous. They appear like dust, and are scarcely perceptible to the naked eye. They subsist upon and destroy the fibrous membrane which attaches the fur to the skin. Hence the practice of sunning and airing furs is highly prejudicial, for as insects fly about in the air, it not only affords them an opportunity of getting in and breeding, but the warmth of the sun nourishes and supports them, and at the same time spoils the color and destroys the life and beauty of the fur.

Coarse furs—such as bear and buffalo skins—may be preserved by beating them well in the spring, and heading them up in an air tight spirit cask, which had been recently emptied. Especial care must always be taken to have furs, woolens, &c., clean and free from insects when put up for the season—and no means are adequate to the preservation of furs that are badly dressed and not cleansed of the natural grease.—*A Troy Furrier.*

Turnip Seed from the Patent Office.

We have received for distribution, by the politeness of Dr. Elwyn, several packages of turnip seed forwarded to him from the Patent Office; and also a large package of the same kind of seeds from the Commissioner of Patents, which we will take great pleasure in distributing to our friends who may apply while the stock holds out. We copy in this connection the circular of Mr. Mason, Commissioner of Patents, and a list of the varieties:

MODE OF CONDUCTING THE EXPERIMENTS.

1. The varieties known as Swedes or Ruta-Bagas may be sown or planted in drills or ridges twenty-five inches apart, and a foot asunder along the drills, in Maine, New Hampshire, Vermont, Massachussts, Rhode Island, Connecticut, New York, Michigan, Wisconsin, Iowa, Minnesota, Kansas, Nebraska, Washington Territory, and Oregon, from the middle of June to the 20th of July; in New Jersey, Pennsylvania, Delaware, Maryland, Virginia, Ohio, Kentucky, Indiania, Illinois, and Missouri, from the 20th of July to the 1st of August; in North Carolina, South Carolina, Georgia, Florida, Alabama, Tennessee, Mississippi, Arkansas, Louisiania, Texas, New Mexico, Utah, and California, from the 1st of August to the 20th of September; and even later in the more southern States. The ground should be rich, dry, and well prepared, and the plants hoed at least twice in the course of the season.

2. The other varieties of seed may be sown broadcast, in Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, Michigan, Wisconsin, Iowa, Minnesota, Kansas, Nebraska, Washington Territory, and Oregon, from the 15th of July to the 1st of August; in New Jersey, Pennsylvania, Delaware, Maryland, Virginia, Ohio, Kentucky, Indiania, Illinois, and Missouri, from the 1st to the 20th of August; in North Carolina, South Carolina, Georgia, Florida, Alabama Tennessee, Mississippi, Arkansas, Louisiania, Texas, New Mexico, Utah, and California, from the 1st of October to the last of November, and in the more southern States, any time during the winter. The land most suitable should be a light sandy or gravelly loam, freshly manured, if necessary, with well rotted farmyard dung, or "folded" or "yarded" by cattle or sheep, or by the addition of guano, bonedust, or by superphosphate of lime. Land newly cleared or burnt over, or old pasture ground ploughed two or three times in the course of the summer, and the latter fertilized by wood ashes, will often produce an excellent yield. The sowing should always be done if possible just before a rain; for the escape from the fly and the success of the crop depends in a great measure upon the quick germination and a rapid growth at first.

The crops in no instance should be harvested until after the general fall of the leaf, or the occurence of a heavy frost. A careful estimate of the quantity of roots and tops raised on a given space of ground may then be made by measurement or weight, which, together with other circumstances connected with their growth, may be entered in a tabular form, and returned to this Office by mail.

CHARLES MASON
Commissioner.

NAMES OF VARIETIES:—No. 1 Skirving's Swedish Turnip, 2 River's Stubble Swedish Turnip, 3 Laing's Swedish Turnip, 4 Green-topped Swedish Turnip, 5 Ball's Hybrid Turnip, 6 Green-topped Six-weeks Turnip, 7 Snow Ball Turnip, 8 Strap-leaved Turnip, 9 Small Yellow Malta Turnip, 10 White Globe or Norfolk White Turnip, 11 Green Round or Norfolk Green Turnip, 12 Green Globe or Green Norfolk Turnip, 13 Golden Ball Turnip, 14 Red Globe or Norfolk Red Turnip, 15 White Tankard or Decanter Turnip, 16 Green Tankard or Decanter Turnip, 17 Yellow Tankard or Decanter Turnip, 18 Red Tankard or Decanter Turnip, 19 Green-topped Scotch Turnip, 20 Purple-topped Scotch Turnip, 21 Skirving's Purple-topped Scotch Turnip, 22 Early Stone or Stubble Stone Turnip, 23 Yellow Stone Turnip, 24 Red-topped Stone Turnip, 25 White Dutch Turnip, 26 Yellow Dutch Turnip.

Exhibition of the United States Agricultural Society.

In our last number, we inadvertently committed an error in stating that the Exhibition of the above Society was to be held this season at Camden, and in connection with the New Jersey State Exhibition.

The mistake occurred by some one calling in our absence, and leaving a note on our desk, to that effect, for publication.

We understand it is yet doubtful if the United States Society hold an exhibition any where this season.

To Destroy Red Ants.

A correspondent of the Southern Cultivator contributes the following method for destroying the above named insects:—Procure a large sponge, wash it well; press it very dry; by so doing it will leave the small cells open—lay it on the shelf where they are most troublesome, sprinkle some fine white sugar on the sponge (lightly over it); two or three times a day, take a bucket of hot water to where the sponge is, carefully drop the sponge in the scalding water, and you will slay them by the thousands, and soon rid the house of these troublesome insects. When you squeeze the sponge, you will be astonished at the number that had gone in the cells."

Acid Phosphate of Lime.

It is some years since this salt was proposed as a manure, and repeated trials since that time have fully demonstrated its efficiency. The simplest method of preparing it is as follows: Bones are thrown into heaps, where they soften by fermentation. They are then covered with half their weight of water in wood or stone vats, and half their weight of oil of vitriol added. The whole passes into a pasty state in the course of eight or ten days, when it is mixed with earth, charcoal, or sawdust, to render it pulverulent. If it be required to apply the salt in a fluid state to land, the paste is diluted with 100-200 times its bulk of water.

Deep Tillage.

Deep plowing turns the drought itself to good account, and renders mulching and irrigation comparatively useless, or, if used, more efficacious. During a dry spell and in trenched ground, roots strike deeper in search of food and moisture, become more extensively ramified, and sooner find the rich loam and manure intermingled deeply with the soil. The leaching process, as it is called, is reversed, and takes place upwards more than at any other time, or, in more scientific phrase, capillary attraction is increased. As each particle of moisture is evaporated from the surface, it is succeeded by another, and the whole soil is filled with the ascended moisture and gases, which are appropiated by the numerous rootlets as they have need.

The wet season is also a blessing to the deep cultivator. The more rain, the more heat, ammonia, carbonic acid, and other organic elements are left in the soil as it descends. As each drop filters through, it is succeeded by another, or by air, both essential to vegetation; and to dissolve, act on, or combine with, the inorganic elements of the soil. As the water drains off, air is sure to follow, and this is the proper mode of its circulation. Each is also generally at a higher temperature than the undrained land, and the warmth of the under soil is therefore relatively increased. The farmer often objects to this waste of water, and would retain it for a dry time! The trenched and porous soil holds water like a sponge, notwithstanding the drainage. It retains or can command enough for the wants of vegetation. But let us see the operation on the undrained land.

The farmer often speaks of his "cold wet land." No variety of soil, in any location, is, of itself, colder than another. The very water which trenching, draining, &c., allow to pass off after imparting its virtues to the soil, if retained on or near the surface by hard impervious sub-soil, becomes itself by its changes, the source of the coldness complained of. Instead of running off, it evaporates, and by this process abstracts a great quantity of heat from the soil and surrounding atmosphere. The evaporation of a pound of water requires about 1000 degrees of heat; some authors stating it less and others more. Or it reduces 100 pounds of air 45°. This is reversing the experiment of Prof. Johnson, in Espy's "*Book of Storms.*" where he says, "a pound of vapor" condensed to water "would heat 100 pounds of air about 45°. The ground to a considerable depth is warmer, by many degrees, where the rain is drained off, instead of being allowed to accumulate and evaporate. Hence this enormous loss of an invaluable stimulus to vegetation.

This chilling and deadly process of evaporation is going on to excess from the time frost comes out of the ground in the spring, till freezing again occurs. At this period, the undrained land, having the most water to freeze, becomes the warmest, say in December, when of no value to vegetation, but rather an injury. For once, forsooth, the undrained land is warmer than the drained! But for this excess of heat in winter, this kind of land must pay dearly in early spring. How is all this? inquires the farmer. Simply because water, in congealing to either ice or snow, has its capacity for heat lessened about one-ninth, and this excess is given off to surrounding bodies; or, in other words, its latent heat is set free. On the other hand, ice, or frost as it is called in the ground, in melting, demands back this same heat, at the rate of from one-eighth to one-ninth of 1000° for every pound melted; and under the surface it does not obtain all this directly from the sun, but through the soil; therefore the more water the colder and longer cold will be the land in spring. Now let the agriculturist go to work and make this "cold, wet, heavy land" of his, the very best he has for any product, trees, vegetables, grains, or grasses.—*Dr. Kelly.*

Trapping Grubs and Cut Worms.

A writer over the signature of C. Q. in the May No. of the Mich. Farmer, relates his success in preventing the depredations of these pests of the farmer by a new and very ingenious invention of his own. As neither fall-plowing nor any other generally known method is much to be relied upon, probably many may be induced to try this newly proposed method. If found as successful as C. Q. represents it, we shall be happy to make a report thereof, and to be the organ through which those who may find it useful shall send a vote of thanks to the original inventor.

Last spring, says C. Q., "I tried an experiment with the "varmints," which I will relate for the benefit of whom it may concern." He planted his corn on a clover-sod plowed in spring. While planting he found plenty of the small grubs. The corn was planted about the 20th of May, and as soon as it came up they commenced their mischief. Knowing no reliable or certain way of saving the corn, he concluded to *trap* them. For this purpose he took a round stick, 3 or 4 feet long and about 2 inches in diameter, and making one end sharp, and taking two rows at a time, he made from two to four holes, 4 or 5 inches deep in or close by every hill. After fixing several rows in this way he waited to see the result. On examination he found that almost every hole had one or more worms in it. In one hole he counted as many as six. He then went over the whole field in the same way, and the result was that hardly a hill of corn was destroyed after the holes were made, while his neighbor's corn just over the fence, which was on ground plowed very early, was more than half cut off by the worms. "It might be supposed," says C. Q., "that when the fellows fell into the traps they would bore into the side and escape; but on watching them I found they would try to climb up the side, but the sides being smooth they always fell back again, when about 24 hours of sunshine and starvation would put an end to them. They usually commit their depredation in the night, and while crawling around to find the corn they tumble in." An additional recommendation of this method is, that the birds will not pull up the corn, when they find plenty of *grub* already provided for them.

C. Q. states farther, that a portion of this field of corn looked green, and flourished luxuriantly, while another portion looked pale and yellow. To the former he had applied (a table-spoonful to each hill) a mixture of 2 parts lime with 3 parts of ashes. The latter had no such application.—*Country Gentleman.*

Millet Culture.

In 1851 I had a dairy of forty-five cows, and having been obliged the year before to buy most of my fodder for a dairy of about the same number, I cast about to see if I could not find something that I could raise in the place of hay that I could keep my cows on, and keep them in a good condition, and at the same time get a good supply of milk from them for market (as milk dairying was my business). I sowed corn and found it an excellent substitute; but to keep so many cows on it required too much labor, and after midwinter it became too dry and harsh, and did not give much milk. In '51, I sowed four acres of millet (four quarts per acre) the 16th of June, and had as much fodder as from any eight acres of grass that year—and it was a good year for hay. I have raised from four to eight acres every year since, and have invariably had good crops of not only fodder or hay, or straw equal to as many tuns of the best timothy hay, but from twenty to thirty bushels of seed to the acre, equal to as many bushels of corn to feed to any kind of domestic animals. I feed most of my seed, after having it ground, to milch cows, preferring it to Indian meal, as mak-

ing more milk and of as rich quality. The last season I had six acres of millet which has been worth more than $50 per acre, or $300 for the six acres. I have fed thirty-five cows on the straw since the 25th of January, and have enough left to last until the 1st of May, and got 120 bushels of seed from the lot. The ripest of the seed, some sixty bushels, I have sold for seed, and the balance I am now feeding my horses, and find they do as well on the meal put on cut hay and straw as they did when I fed an equal quantity of corn and oat-meal.

Now for the manner of raising it; I have raised it on green sward, turned over at my convenience any time in the fall or in the spring up to the time of sowing; I then harrow until mellow, then put on from twelve to eighteen quarts of seed per acre, and as much fine manure as I can spare, from five to fifteen good wagon loads per acre, and sow about the middle of June, and I am sure to have double the amount of hay that the same land in similar condition would produce in meadow. It will stand the drouth better than any other crop I ever raised; in fact, it wants hot, dry weather for it to grow in; if it is moist enough for it to to come up, there is but little danger, as the last two years have proved. After the seed is sown and well dragged or cultivated, the ground should be well rolled, as we get a good deal of dry weather about that time, and if not rolled it may be too dry for the seed to grow; but after it is once up, I think there is but little danger of a failure of a crop. The time of cuttiug that I have practised is, as soon as I get through with my oats—say the last of August, or when about half of the heads have seed matured enough to grow. The stalk will be green and full of juice. I cradle it, let it lay one or two days to wilt, and stack it up as I do oats, put on a cap, and let it cure in the stack; it will then be as bright as the best toppings of corn, and any animal will eat it as readily as any other forage.—T. B. Shepard, in *Genesee Farmer.*

Plea for the Birds.

The Norwich Examiner, in a notice of Hovey's Magazine for February, says:

"Wilson Flagg continues his plea for the birds and certainly makes out a very plausible argument for the crows and blackbirds, which have been too long put under ban by the sapient legislatives of New England. It is among our earliest recollections, living in the family of a Justice of the Peace, that the farmers' boys brought young crows by the basketful, to receive the bounty upon them. The cry of these poor birdlings, just taken from their nests in the deep forests, and with the down of infancy upon their half covered skins, haunted our boyish imagination for months after the sacrifice. It seemed a most inhuman butchery. The bounties so thinned out the crows, and insects increased to such an extent, that some of the States were obliged to offer counter rewards for the protection of the crows.

"The red wing crow and blackbirds live to a great extent upon grub-worms, caterpillars and other larvæ—the silent, but deadly enemy of all vegetation, and whose secret and insidious attacks are more to be dreaded than the combined mischief of all the feathered tribes put together. It is reported that when the locusts had been accidentally introduced into the isle of Bourbon, and had spread so as to destroy vegetation, a few grackles introduced from India soon multiplied so as to exterminate them. The wood-peckers and the night-hawks are also shown to be very useful birds,

"Who would grudge the common robin his feast of cherries, or the blackbird his grains of corn, if he were at once convinced that the services of these birds, and others, are all that can save our crops from destruction, and the world from famine. They are profitable servants, who glean a tribute from our orchards and cornfields, as the wages of their labor; and if we could make an exact estimate of the amount of service they perform, we should find them abundantly worthy of their hire. If the poor bird who is outlawed for a little mischief he is supposed to do, should present his bill containing an enumeration in figures of the amount of grubs and insects he had destroyed, we should probably be startled at our own indebtedness, and be willing to pay him more liberally than he pays himself, for the continuance of his services."

Save Your Plums Now.

We begin to think this can be done without Mr. Matthews, if not with him. We were yesterday on the grounds of one of our best horticulturists, and saw the application, and have some faith in its success. Our friend thinks there is no chance for mistake about its efficacy. He informed us that he applied it last year, after the curculio had begun its ravages, and that it not only saved those which were unstung, but many of the plums on which the insect had left his card, healed and ripened well. The liquid enters the opened wound and destroys the egg. This is the only remedy he has ever found to avail against this slippery enemy of one of our best fruits. His recipe is—One peck of unslacked lime, six pounds of salt, one barrel of water. The mixture is to be applied with a common garden syringe. If one application is not sufficient, repeat it. A single application answered with him last year

No time is to be lost, as the young plums are already set, and the enemy has begun to show himself. If a syringe is not to be had, sprinkle on the liquid in some other way. The mixture is cheap and easily applied, and every man who has a plum tree should try it. This is the most philosophical remedy we have yet seen suggested, and we commend it with more confidence than most new things to the notice of fruit growers. If it answers our expectations, it will be worth millions to the country. Plums can be grown on loose, sandy loams as well as on clay soils, to which they have hitherto been mainly confined, on account of the ravages of this insect. The cultivation of this fruit may be indefinitely extended, and we may make our own dried plums instead of importing them from France.

Those who have Mr. Matthews' remedy in keeping should hurry up their secret, or they will be too late for the fair.—*American Agriculturist.*

Hay for Cows in Summer.

An observing intelligent and successful farmer informs us that he is in the practice of feeding his cows with hay in summer, particularly if the season is such as to afford flush pastures. His reasoning is that a full, rapid and vigorous growth of grass gives to cattle that feed upon it, a desire for something to absorb the excess of the juice in their food. Dry hay they devour greedily, and though in over so small quantities, evidently with the most beneficial effects. Every farmer must have observed that in dry seasons, horses, cattle and sheep, keep in good condition upon herbage parched and apparently scant, while in wet seasons, in tall pastures, though always full, the process of fattening with them was slow. Dry fodder in such cases is required to give substance and tenacity to the green, and can be profitably used by feeding it to horses and cattle.—*Newburgh Telegraph.*

We clip the above from the Rural New Yorker, and do not remember ever to have seen or heard the observation before about dry hay in summer for stock. It strikes us there is sound philosophy in the theory. We have often noticed our cows eating dry herbage in the midst of plentiful pasture,

but the reason why, never occurred to us. This is one of the cases, where a practical hint of much value may be gleaned by the farmer from his agricultural paper.

Why there is no Rain in Peru.

In Peru, South America, rain is unknown. The coast of Peru is within the region of perpetual south-east trade winds. Though the Peruvian shores are on the verge of the great South Sea boiler, yet it never rains there. The reason is plain. The southeast trade winds in the Atlantic ocean first strike the water on the coast of Africa. Travelling to the northwest, they blow obliquely across the ocean until they reach the coast of Brazil. By this time they are heavily laden with vapor, which they continue to bear along across the continent, depositing it as they go, and supplying with it the sources of the Rio de la Plata and the southern tributaries of the Amazon. Finally they reach the snow capped Andes, and here is wrung from them the last particle of moisture that that very low temperature can extract. Reaching the summit of that range, they now tumble down as cool and dry winds on the Pacific slopes beyond. Meeting with no evaporating surface, and with no temperature colder than that to which they were subjected on the mountain tops, they reach the ocean before they become charged with fresh vapor, and before, therefore, they have any which the Peruvian climate can extract. Thus we see how the top of the Andes become the reservoir from which are supplied the rivers of Chili and Peru.—[Lieut. Maury's Geography of the Sea.

The Late Thomas Bates of England.

The fact is, that he possessed that intuitive genius, without which no man can hope to rise above a bungler in the difficult art of breeding. With this he united long experience, and a degree of enthusiasm which no difficulties could repress, no failures could daunt. He loved his cattle for their own sake, not for the money he might happen to make by them; above all, he never forgot the character of the animal he was dealing with. He insisted on a cow being a cow, and not a mere oblong box of fat. Hence the charm of his herd, of which every individual has a character which when once studied will never be forgotten. Hence he did not, as some breeders do, neglect the milking qualities of his favorites, for he well knew that a first rate animal may both milk and feed.

From my own experience, I find the cows of Mr. Bates' blood the best thrivers on hard keep and in an exposed situation I over possessed. The popular notion that highbred animals are tenderer than mongrels is a mistake, arising in great measure from the injudicious nursing they too frequently receive. I never pamper my short-horns, and, therefore, when removed from my farm it would be difficult to find a situation on which they would not thrive, or food on which they would not keep their condition.—*Willoughby Wood, in Agricultural Gazette.*

How to Prevent Weevil.

We are informed by Mr. Chamberlain, of the City Mill, that the farmers of Vermont are in the habit of heading the movements of the weevil, by a simple process. The next season after it makes its appearance, they go through their wheat fields, about the time the wheat is heading, immediately after a shower or while the dew is on it, and scatter newly slacked lime broad cast, so that it will adhere to the heads and stems of the grain. They use about a bushel to the acre. Good lime should be secured, and slacked by sprinkling a little water over it so as to retain all its strength. A paddle may be used in scattering it. The remedy has, it is said, been so effectually tried, as to leave no doubt of the result. Strips in large wheat fields left untouched by the lime, for experiment, have been entirely destroyed by the weevil, while the grain on each side was all saved.

Since this intelligence was received, Mr. Jesse Allen, of the Centre Mill, has received corroborating information from a Muskingum county farmer, who had seen the same practice and the same results there.—*Akron Beacon.*

A Speculator Cured.

Once on a time a country Dutchman early one morning went to town, where by chance he overheard some traders telling each other how much money they had made that morning by speculation; one of them had made $100, $200, $500, &c. Han's bump of inquisitiveness was so excited that he, without any reflection, forthwith concluded to leave his former business, which was labor, and try his hand at speculation, and on his return home made known his intentions to his faithful vrow. Early next morning he gathered his wallet containing his funds, amounting to five dollars, and off he goes post haste and half bent to look up a speculation. He had not proceeded far when he met a wagoner, and accosted him thus:

"Good morning, Mr. Wagoner, I wants to speculate a leetle dish morning wid you." "Well, say," said the wagoner, "how do you want to speculate?" "Well," says the Dutchman, "I will bet fife dollars you can't guess what my dog's name ish." "Call him up till I look at him;" rojoined the wagoner. *Dutchman*—"H-er-e Va-tch, he-re Wa-tch, he-re Va-tch," the wagoner eyes him for a moment and said, "I guess his name is Watch." *Dutchman*—"O besure, Mr. Wagoner, you has won him, de monish is yours," and Han's returned to his old occupation perfectly satisfied.

Great Yield of Cucumbers.

Mr. Daniel Morse, of Lockport, N. Y., writes to the Southern Farmer as follows:

For the benefit of your readers, I give you the production of eight hills of cucumbers, planted in my garden last spring. The manner of planting was taken from one of the agricultural journals.

Having fully prepared a good garden soil by repeated spadings, I placed barrels at a distance each way of eight feet, and about six inches in the ground. The barrels were then filled with barnyard manure, and seeds previously soaked for 24 hours planted around, and about four inches from the barrels. After the plants made their appearance, and when there had been no rain during the day, two pails of water were put on the manure in each barrel every night, which found its way through holes bored in the lower head. About four plants were left to each of the eight barrels. The end of each vine was pinched off just before fruiting. Now for the result and number of each picking.

1st	gathering	70	11th	gathering	247
2d	"	122	12th	"	387
3d	"	131	13th	"	254
4th	"	160	14th	"	427
5th	"	145	15th	"	258
6th	"	172	16th	"	366
7th	"	179	17th	"	305
8th	"	186	18th	"	260
9th	"	252	19th	"	214
10th	"	276	20th	"	183
Total					4594

An Umbrageous Oak.

There is an oak tree near Raleigh, N. C., which, at the sun's meridian, covers with shade a space of 9,000 feet. It would afford shelter for 4,500 men.

Pennsylvania Horticultural Society.

The stated meeting of this association was held on Tuesday evening, at Concert Hall. The plants and flowers were of great beauty and the display charming.

The following premiums were awarded.

By the Committee on Plants and Flowers—*Glorianias*, eight plants, eight varieties—for the best to Thomas Robertson, gardener to B. A. Fahnestock; for the second best to Alexander Burnett, gardener to A. P. M'Kean. *Fuchsias*, 8 plants, 8 varieties—for the best to Thos. Robertson, gardener to B. A. Fahenstock; for the second best to Mark Hill, gardener to M. W. Baldwin; for the third best to Jno. Pollock, gardener to Jas. Dundas. *Lilies*, 3 plants—for the best to Robt. Buist. *Carnation*, for best American seedling to H. A. Dreer. *Herbaceous cut flowers*, for the best to T. Meehan. *Collection of* 12 *plants*, for the best to Robt. Buist; for the second best to Thomas Robertson, gardener to B. A. Fahnestock. Collection of six plants, for the best to J. J. Habermehl, gardener to John Lambert. *Specimen Plant*, for the best *Medinilla-magnifica*, to Thomas Robertson, gardener to B. A. Fahnestock; for the second best, the *Rhucospermum jasminoides*, to Robert Buist. *New Plants*, for Fuchsia Duchess of Lancaster, $2 to Thos. Robertson, gardener to B. A. Fahnestock. *Table Design*, for the second best to A. L. Felton. *Basket of Cut Flowers*, for the best to Jerome Graff, gardener to C. Cope; for the second best to J. J. Habermehl, gardener to J. Lambert; of indigenous flowers, to Thos. Meehan. *Bouquets*—For the best to H. A. Dreer; for the second best to Jerome Graff, gardener to C. Cope.

SpecialPremiums, $3 to John Pollock, gardener to James Dundas, for Seedling Gloxinias; $3 for Orchids, &c., to the same; $1 for a collection of Stocks, to H. A. Dreer; $1 for Seedling Verbenas, to the same; $2 for fine Roses, &c., to Robert Buist. The Committee noticed a very fine Seedling green edged Petunia, grown by A. C. Pracht, of Baltimore.

By the Committee on Fruits.—*Strawberries*, 2 quarts, for the best, to A. L. Felton; for the second best, to Robert Buist. *Cherries*, 3 pounds, for the best to Samuel Cooper; for the second best to G. W. Earl. *Currants*, for the best white and the best red, to Isaac B. Baxter, special premium. *Grapes*, pot culture, for three very fine bunches of Black Hamburg and Frankenthal, two dollars to Wm. Thompson, gardener to J. Tucker; for three bunches of Black Hamburg, &c., to Mark Hill, gardener to M. W. Baldwin; for three bunches of white varieties. two dollars to the same. For a collection of nectarines and peaches, two dollars to Jerome Graff, gardener to C. Cope. For very fine Moyamensing strawberries, one dollar to A. L. Felton, and for superior Pennsylvania strawberries, one dollar to G. Schmitz.

By the Committees on Vegetables—Display by a market gardener, for the best to A. L. Felton. Special premiums of two dollars, for a very fine collection of cauliflowers, to John Riley, gardener at Insane Asylum; one dollar for two dishes of Mushrooms, to Alexander Burnett, gardener to H. Pratt M'Kean.

The Plum Weevil, or Curculio.

We make the following extract from the report of Mr. Townsend Glover on the curculio, which will be published in the forthcoming agricultural report of the Patent Office:

'The plum weevil, or curculio, (*rhynchænus nenuphar,*) is one of the most destructive insects that the horticulturist has to fear, not to plums alone, but to cherries, nectarines, and apples, which are indiscriminately attacked; and in the more Southern States, peaches also suffer much from the larvæ of a weevil of this kind, of similar habits and shape, if not identically the same. The perfect curculio is about two-tenths of an inch in length, of a dark brown color, with a spot of yellowish white on the hind part of each wing case. The head is furnished with a long curved snout or bill, with which it is enabled to bore into the unripe fruit by means of jaws placed at the end of this bill. The wing cases, which are rigid, uneven, and humped, cover two transparent wings, by which the perfect weevil is enabled to fly from tree to tree; but when these wing cases are closed, the back appears without any surface or division, which has led to the very erroneous idea among farmers that the insect cannot fly. When disturbed, or shaken from the tree, it is so similar in appearance to a dried bud that it can scarcely be distinguished, especially when feigning death, which it always does when alarmed. As soon as the plums are of the size of peas, the weevil commences the work of destruction by making a semi-circular cut through the skin with her long curved snout, in the apex of which cut she deposits a single egg. She then goes to another plum, which is treated in a similar manner, until she has exhausted her whole stock of eggs. The grubs which are hatched by the heat of the sun, immediately eat their way to the stone in an oblique direction, where they remain gnawing the interior until the fruit is weakened and diseased, and by this treatment falls from the tree. The grub, which is a small, yellowish, footless, white maggot, then leaves the fallen fruit, enters the earth, changes into a pupa, and in the first brood comes to the surface again, in about three weeks, as a perfect weevil, to propagate its species and destroy more fruit. It has not yet been decided whether the latest generation of the weevil remains in the ground all winter in the grub or in the pupa state. Dr. E. Sanborn, of Andover, Massachusetts, asserts, however, that the grubs, after having entered the earth, return to the surface in about six weeks as perfect weevils, which must remain hidden in crevices until spring. The most popular opinion is that they remain in the larvæ or pupa state. The worm or grub is often found in the knots or excrescences which disfigure and destroy plum trees, and has been wrongfully accused of being the cause of these swellings; but it is highly probable that the weevil, finding in the young knots an acid somewhat similar to that of the unripe fruit, merely deposits its eggs therein as the nearest substitute for the real plum.

"Some of the remedies recommended for preventing the ravages of these insects are actually absurd, such as tying cotton round the trees in order to prevent them from ascending, when it is known that they are furnished with wings, and fly from tree to tree with the greatest ease. Among the remedies at present in use one is to cover the fruit with a coating of white-wash, mixed with a little glue, applied by means of a syringe; another is to spread a sheet upon the ground under the tree, and then jar the principal branches suddenly with a mallet covered with cloth, so as not to bruise the bark, when the perfect insects will fall into the sheet and feign death, and may be gathered and destroyed. Hogs are sometimes turned into plum orchards, where, by eating the fallen and diseased fruit, they materially lessen the evil. Coops of chickens placed under the trees, and the branches often shaken, the insects fall, and are eagerly seized and devoured. All fallen fruit should be gathered up several times in the course of the season and burnt, or given to hogs, or destroyed in some other way. By so doing thousands of the grubs which have not yet left the plums are destroyed; but, as yet, no thoroughly practical remedy has been made public, and the above are merely mentioned as being useful in small gardens containing only a few trees."

BEWARE.—Were it not that we have already heard of several deaths from drinking immoderately of cold water in this hot season, we should think a caution unnecessary.

Truths Established by Agricultural Chemistry.

FROM LIEBIG'S NEW WORK.

[Continued from last number.]

19. All obstacles, present in the soil, which hinder the solution and absorbability of the plant-food, proportionally destroy its ability to serve as food; they make the plant-food ineffective. A certain physical state of the soil is a needful preliminary condition to the efficacy of the food therein contained. The soil must allow the access of air and moisture, and permit the roots of plants to extend themselves in all directions, and seek out their nutriment. The expression, *telluric* conditions, comprises every thing necessary to vegetable growth, that depends upon the physical qualities and composition of the soil.

20. All plants need as nourishment *phosphoric acid, sulphuric acid, the alkalies, lime, magnesia,* and *iron.* Certain families of plants require silica; those that grow on the sea shore, and in the sea itself, require common salt, soda, and iodine. In some families of plants the alkalies may be in part replaced by lime and magnesia, and vice versa. All these bodies are collectively designated as mineral food. The atmospheric food of plants is carbonic acid and ammonia. Water serves itself as food and also as a general medium of nutrition.

21. The bodies that are necessary as food for the plant, have an equal value in this respect, i. e. if any one of the entire number be wanting the plant cannot flourish.

22. Fields which are adapted to the cultivation of all species of plants, contain all the soil-ingredients that are necessary for these plants; the words *poor* or *unfruitful,* and *rich* or *fruitful,* express the relations of these soil-ingredients in quantity or quality.

Among qualitative differences, are understood differences in the solubility of the mineral ingredients, or in their capability of entering the vegetable structure through the agency of water.

Of two soils which contain equal quantities of mineral food, one may be fruitful (considered as rich), the other unfruitful (considered as poor), when in the latter these nutritive substances are not free, but exist in the state of chemical compound. A body in chemical combination, opposes, by its attraction for the bodies it is combined with, an obstacle to another body that tends to unite with it. This opposition must be overcome before the two will unite.

23. All soils adapted for cultivation, contain the mineral nutritive matters in both these forms. Taken together they represent the capital of the soil; the freely soluble parts are the movable or availablecapital.

24. The improvement— enriching, making fruitful—of a soil by proper means, but without addition of mineral plant-food, implies a conversion of a part of the inactive, unavailable capital, into a form available for the plant.

25. The mechanical operations of tillage, have the object to overcome chemical obstacles, to set free and render directly useful the plant-food that is in insoluble chemical combination. This object is accomplished through the co-operation of the atmosphere, of carbonic acid, oxygen and water. This action is called *weathering.* The presence of standing water in the soil, which cuts off the access of the atmosphere to the chemical compounds in the soil, hinders the process of weathering.

26. *Fallow* is the period of weathering. During fallow, by means of air and rain, carbonic acid and ammonia are added to the soil. The latter remains there when substances are present capable of fixing it, i. e. depriving it of volatility.

27. A *soil* is fruitful for a *given* species of plant, when it contains the mineral substances needed by that plant in proper quantity and proportion, and in a form adapted for entering it.

28. When this soil has become unfruitful by continued use, by the removal of a series of crops without replacing the mineral ingredients carried off, it will recover its productiveness for this kind of plant, by lying one or more seasons in fallow, if, in addition to the soluble and removed ingredients, it had contained a certain store of the same substances in an insoluble form, which, during the fallow, by mechanical division and weathering, are capable of becoming soluble. By the so-called *green manuring,* this result is effected in a shorter time.

29. A field which does not contain these mineral forms of plant-food, cannot become fruitful by lying in fallow.

30. The increase of the productiveness of a field by fallow and tillage, and the removal of soil-ingredients in the crops, without a return of the latter, brings about, in shorter or longer time, a state of permanent unfruitfulness.

31. In order that the fertility of a soil be permanent, the removed substances must be replaced at certain intervals, i. e. its original composition must be re-established.

32. Various species of plants require the same kinds of mineral food to their development; but in unlike quantities, or at different times. Some cultivated plants need that silica be present in soluble form in the soil.

33. When a given field contains a certain amount of *all* kinds of mineral plant-food in *equal* proportion, and in suitable form, it will become unproductive of a single species of plant, so soon as, in consequence of continuous cropping, any single kind of plant-food, e. g. soluble silica, is so far exhausted that its quantity is insufficient for a new crop.

34. A second plant which does not require this ingredient (silica e. g.), will yield one or more crops on the same soil, because the other, for it necessary, ingredients, although in changed proportions, (i. e. not in equal quantities) are yet present in quantity sufficient for its perfect development.

After the second, a third kind of plant will flourish in the same field, if the remaining soil-ingredients be enough for its wants; and if, during the growth of these kinds of plants, a new supply of the wanting plant-food (soluble silica) has been made available by weathering, then, the other conditions being as before, the *first* plant will again flourish.

35. On the unequal quantity and quality of the mineral ingredients of the soil, and on the differing proportions in which they serve as food for the different kinds of plants, is based the alternation or rotation of crops, in general, as well as the peculiar method according to which it is carried out.

26. Other things being equal, the growth of a plant, its increase in bulk, and its perfect development in a given time, stand in relation to the surface of the organs whose function it is to take up the food of the plant. The quantity of plant-food that is derived from the atmosphere, depends upon the number and surface of the leaves; that which is taken from the soil, upon the number and surface of the roots.

37. If to two plants of the same species, during the formation of leaves and roots, an unequal amount of nourishment be offered in the same space of time, their increase of mass is unequal in this time. That plant which has received more food increases more, its development is facilitated. The same difference in growth is manifest, when two plants receive the same amount of food, but in unlike forms as to solubility.

The rapidity of the development of a plant is facilitated by furnishing it with all the necessary atmospheric and telluric nutritive matters in proper form and at the right time. The conditions that shorten the time of development, are the same as those that contribute to its amount.

38. Two plants whose roots have an *equal* length and ex-

tension, do not flourish so well near or after each other, as two plants whose roots, being of *unequal* length, acquire their nourishment at different depths in the soil.

39. The nutritive substances needed by the plant must act together in a given time, in order that the plant attain full development in this time. The more rapidly a plant develops itself in a given period, the more food does it need in that time. Annuals require more rapid supplies than perennials.

40. If one of the co-operating ingredients of the soil or of the atmosphere, be partly or entirely deficient, or want those qualities that adapt it to absorption, the plant does not develop itself in all its parts, or only imperfectly. The *deficiency* of one ingredient makes those present without effect, or diminishes their effect.

The New Rochelle Blackberry.

BY U., ADRIAN, MICH.

Having recently visited New Rochelle, Westchester co., N. Y., and there learned many particulars respecting the discovery of the *New Rochelle* or (as it is more commonly called) *Lawton* Blackberry, I take the liberty to make this communication, in the hope that *eventually*, though *tardily*, proper credit may be given to the person to whom the public are *really* indebted for the discovery and preservation of this remarkable fruit.

In the year 1834, Mr. Lewis A. Seacor, then and now residing in the village of New Rochelle, found, on a farm now owned by F. Prince, Esq., a clump of Blackberry bushes bearing fruit of uncommon size, which differed much in shape and appearance from any he had ever seen. Four or five years afterward, having purchased a lot for a residence, he recollected these Blackberries, went to the field, dug up and transplanted several of them into his garden. When in due time these bushes bore fruit, Mr. S. says his neighbors were greatly surprised, and, attributing the difference in size and shape from the common fruit to *cultivation alone*, several of them supplied themselves with the common wild plants from the fields, expecting to gather fruit equally large as Mr. Seacor's. In this expectation they were disappointed, and after a few years' trial the plants which had been so carefully cultivated were dug up and thrown away as worthless. Mr. S. now supplied several of his neighbors with plants from his garden, and the fruit became generally known in his vicinity.

Seven or eight years ago, Mr. Lawton (after whom the fruit has been named) saw some of these Blackberries in the garden of a neighbor, inquired where the roots were obtained, &c. He bought plants of Mr. Seacor, was told by him where they were found, the circumstances of their discovery, &c. In 1853, at a meeting of the Farmers' Club, in the city of New York, Mr. Lawton presented a quantity of these Blackberries, which were greatly admired. He also at that time read a paper before the Club, in which he says, (I quote from a report of his remarks published in the newspapers,) "it [this fruit] has been cultivated in small quantities for several years in New Rochelle, where I now reside. I have not been able to ascertain who first discovered the plant and brought it into garden culture, but am informed it was found on the roadside, and thence introduced into the neighboring gardens." The Farmers' Club passed a vote of thanks to Mr. Lawton, and named the fruit the "*Lawton* Blackberry." The Pomological Convention, which assembled in Boston last year, also use the same name in their list of fruits; so that it is likely to be perpetuated, unless the facts in the case are known. Ask any person in New Rochelle, acquainted with the fruit, as to its origin, and you will be told MR. SEACOR was the discoverer.

It may be well to mention that Mr. Prince, the present owner of the farm where the fruit was found, in making some improvements on his land, destroyed the original bushes, without knowing anything of the existence of such fruit on his premises; so that but for Mr. Seacor's efforts, the fruit would have become extinct.

Now, if his agency in preserving this valuable fruit has not been of a character sufficiently meritorius to make it proper that it should bear *his* name, there is certainly no reason why it should bear Mr. Lawton's. But it may be asked, "What's in a name?" to which I answer, in *this* case, much. By getting his name affixed to the fruit, Mr. Lawton does not merely (to use a common phrase) "steal another man's thunder," but he is placed in a situation to make a great deal of money out of it. Persons, unacquainted with the above facts, wishing to obtain this Blackberry, would naturally say, "Who so likely to furnish the *genuine Lawton* Blackberry, as Mr. Lawton himself?" And I find for the year past he has been selling the plants at ten dollars the dozen (double the price charged by Mr. Seacor); and although in the *end* he may not win golden *opinions*, he is likely to win plenty of golden *dollars*, which perhaps he may value more.

I would suggest that the New York or Brooklyn Horticultural Society investigate this matter, and let justice be done; the parties live in their immediate vicinity.

There have been many conjectures as to the origin of this fruit. It is known that a relative of a former proprietor of the farm brought shrubbery with him from England, and some suppose this Blackberry was then introduced; others think the Huguenots, who originally settled New Rochelle, brought it with them from France; but the prevalent belief appears to be that it is an accidental seedling.

For the facts embodied in this letter, I am indebted to a communication from Frederick Prince, Esq., (the present owner of the farm where the fruit was found,) published in the *Westchester News*, and to the verbal statements of Mr. Seacor and some of his neighbors; and I have every reason to believe all these statements to be *substantially* correct. *Horticulturist.*

A New Vegetable.

The first substantial result of the Gadsden treaty purchase from Mexico, is the promise of a vegetable known as "Ammabroma Sonoræ," or the Sand Food of Sonora, which is said to abound in the acquired territory. It is described as a parasitic plant, with a large and fleshy root. It is cooked by roasting on hot coals, and it much resembles the sweet potato, having a great deal of saccharine matter in it. It may also be dried and used for the table, and it is in this way alone we can hope to taste it, for Prof. Torrey, who has examined it, thinks it cannot be grown out of Sonora, unless the root to which it attaches itself can also be transplanted.

For the benefit of scientific readers, we add that Prof. Torrey, as the result of his examination of the Ammabroma finds it to constitute "a new genus of the small group or family represented by the little known and anomalous *Corallophyllum* of Kouth and the *Pholisma* of Nutall; in the floral structure and the scales, more like the latter from which it is distinguished by its wooly plumose calyx, and its singular cythiform inflorescence." These are hard words to swallow, but Mr. A. B. Gray, who has tried the vegetable, found it not at all hard to take, and thinks that it may become as much of a favorite on the table as the sweet potato or asparagus. It is for this great prospective vegetable that the United States Government has paid ten millions of dollars, and we hope hereafter there will be no further question of the wisdom of our diplomacy.

Reported Expressly for the Farm Journal.

First Trial of Mowers in 1855.

A great trial of Mowing Machines took place on the 15th and 16th of June, on the farm of J. S. Dickenson, of Bedford, Westchester co., N. Y., and on the estate of Judge Jay, of the same place. Eleven Machines were entered. One of Ketchum's built by Howard & Co., of Buffalo. One do. built by Messrs. Hull, of Poughkeepsie, N. Y., and one one-horse Mower, also Ketchum's patent, built by Ruggles Nourse, Mason & Co., of Boston. One of Manny's Combined Reapers and Mowers built by Ball & Co., of Hoosic Falls, N. Y., and two more of the same patent built, with some alleged improvements by Adrain, of Boston. One of Allen s built by R. S. Allen of New York. One of Russel's built at Boston and entered by Mr. Lease, of Albany. One of Forbush's Combined Reaper and Mower's built by the American Mowing Machine Manufacturing Company of Buffalo, and one of Hallenback's built by Deering & Dickinson of Albany. The order of the first day was each Machine to mow two swaths operated by the same team and driver, and subsequently each Machine to mow a given portion of meadow, operated as might be desired by the exhibitor. The machine first entered was Ketchum's by Howard & Co. Weight 650 lbs. iron frame with two sets of gears. Cutters three and a quarter inches long and vibrating thirty-six times in passing over nine feet of ground. Trial *first cut*, clean and well, but worked rather heavily and left the grass slightly tangled; *second cut* worked similarly. The second Machine operated was Russel's. Weight about 700 lbs wood frame with wheel in addition to driving wheel. Motion transmitted to the cutters by a cam wheel instead of by a crank as in all the other machines. This wheel is about twenty inches in diameter and communicates four vibrations to the cutter in each of its revolutions, and it must be confessed, is rather noisy in its operations. The cutters instead of vibrating in a straight line, as do those of all the other machines, vibrate on pivots passing through their centres—the end of each cutter thus describing a curve almost a semicircle—vibrating thirty-two times in passing over nine feet. Trial *first cut*, but passing well, but delivered rather imperfectly, and before arriving at the end of the field had accumulated such an amount of grass on the guard car that it cut rather long and straglingly. In mowing the second cut the operation differed but little from that of the first. It is perhaps due to this machine to report that its exhibitor, at this time, observed that during the whole time of its trial there blew quite a gust of wind bending the grass away from the cutters, and that had the machine been driven in a contrary direction, it would have he, said, operated perfectly.

The Machine next entered was Manny's by Adrian, as above. Weight 800 lbs., wood frame with two sets of gears, and reel which taken with all its connexions, embraces a rather complicated looking apparatus. Length of cutter two and three-quarter inches, and cuts twenty-eight times in passing over seven and a half feet. Trial *first cut*, mowed well, but worked rather more heavily than Ketchum's and cut not quite so low. *Second cut*, stopped once and cut rather long and straglingly. One of these two Machines being driven against the wind mowed rather better than the other. The next Machine operated was Forbush's. Weight of Combined Machine 900 lbs., of Mower alone, 700 lbs., wood triangular shaped frame with two sets of gears and reel and apparatus something similar to the two last tried. Length of cutter two and three-quarter inches, vibrating twenty-eight times in passing over nine feet. Trial *first cut*, cut well on starting, then clogged and cut long and straglingly. *Second cut*, the driver walked and the Machine operated rather better. The next Machine entered was Hallenback's. Weight 500 lbs., wood frame, one set of gears. and altogether very simple in its design and construction. Length of cutters three and three-eighth inches, vibrating thirty times in passing over ten feet. Trial *first cut*, cut with hardly any perceptible labor to the horses and very quietly and effectively, leaving the grass behind it, perfectly parallel. *Second cut*, cut (as everybody in the field said) most excellently. The next Machine operated was Manny's by Ball & Co. Weight of Combined Machine, 800 lbs., of Mower alone 700 lbs., wood frame with two sets of gears and reel, with the usual accompanying, rather complicated looking apparatus. Length of cutter two and three-quarter inches, vibrating twenty eight times in passing over seven and a half feet. Trial *first cut*, draws heavy—horses work rather laboriously, but the Machine cuts well, leaving the grass, however, slightly stragling. *Second cut* not materially different from the first. Perhaps it should be reported that this Machine cuts five feet wide, while the other Machines cut but about four and a half each. The next Machine worked was Ketchum's by the Messrs. Hull, which with the exception of a greater noise, and rather more labor to the horses, cut and laid the grass quite as well as Hallenbeck's. The last Machine tried was Ketchum's one horse Machine, which, cutting a swath about two and a half feet wide operated about the same as Ketchum's as above, by Howard & Co. The trial proceeded, according to the order given above, during the whole afternoon and the next forenoon on the lawn in front of the residence of Judge Jay, but as each of the Machines continued to operate very much as in the first trial it is unnecessary to proceed with details. Hallenbeck's and Ketchum's by the Messrs. Hull were decidedly the two best Machines on the grounds. In reference to the single gearing of the former, Mr. Ketchum, remarked that in 1848 and 9, he had tried such a system of gearing sufficiently to prove to himself and friends that it could not be made to answer the purpose; to which a bystander replied that "according to his, Mr. Ketchum's admission, the cutting apparatus was exceedingly imperfect compared to what it is at present, and that if he should now try the one set of gears he would certainly find that with his improved and perfect guard-bar, guards and cutters it would operate quite as effectively as the double gearing; and so, of course, with less noise, with far less labor to the horses, and with less of an uneasy and tiresome vibration communicated to the seat of the driver." With this perfected guard-bar, these perfected guards and cutters, it is altogether unnecessary". Mr. Hallenbeck affirms, "to have more than one set of gears," while after the trial, the farmers' argument in its favor was that "it was easy on the horses and operated first rate."

During a recess of the trial S. B. Johnson Esq. of the State Agricultural Society, delivered a highly interesting and instructive address, while during the entire time of the trial—meal times, evenings, and nights the farmers livings in the vicinity, were kind gentlemanly and hospitable.

Mowing Machines

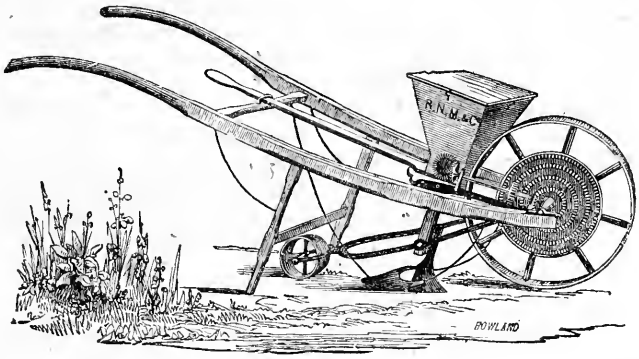
The late trial in Westchester co. New York:—I have just received the manuscript Report of the Judges appointed for the above trial, (being substantially published in your paper of the 21st inst.,) which gives me the opportunity of correcting from an official document the report which appeared in the Tribune of the 16th inst. with regard to Allen's Mowing Machine. Your last says:—"The bar that holds the knives appears to run low, but it does not cut as close as some of the other machines, and does not work as easily. It may do better in heavy grass, but with three of the principal men of the manufacturer's to direct its operations, it did not give

satisfaction to the proprietors or public.

There are slurs, insinuations and mistatements enough in this mischievous little paragraph to condemn half-a-dozen good machines if left uncontradicted. "The bar *appears* to run low, but does not cut as close as some of the other machines, and does not work as easily." The Committee thought it "cut low and smooth" enough to give it the *first award* with four others, out of the nine machines entered for trial; and as to "working easily "they gave it *the highest award*, with two others only out of the nine,

Again, "with three of the principal men of the establishment," &c. Of the *principal men* alluded to, two never saw any mowing machine at work except Allen's, and then only for an hour or two in unripe grass; and the other had in addition, carelessly looked at Ketchum's last season, while at work, for ten minutes only. This was the sum total of their aggregate experienence in managing mowing machines previous to going to this tiial. That they should not have made the machine go perfectly through the first swath, (on which we presume this self styled report was based,) is not surprising, when all were ignorant of its practical working; and even this would have been avoided had the driver stopped to arrange the draught properly as he was instructed, instead of dragging over the ground with the machine improperly adjusted. That "it did give satisfaction to the (sole) proprietor" he first learned through the Tribune the following morning, as he was not within 45 miles of the trial ground. How "dissatisfied the public "were with this trial may be gathered from the report of the committee, and from the further fact that several persons gave orders for this machine before the conclusion of the trial, for which they said no guarantee was necessary, a result I believe confined wholly to this ma chine.

Of the six principal points made by the committee, the Allen machine received, in connection with one or more of the others,the *highest award in five*, and in the remaining one, on which they express *an opinion* rather than *an assertion*, I will guarantee, this inferior to none other exhibited on this or any other occasion.—R. L. ALLEN, Nos. 189 and 191 Water-st..—*New York Tribune.*



Seed Sower.

The above engraving gives a good idea of the Seed Sower manufactured by Ruggles, Nourse & Mason, Boston, and for sale at the principal agricultural warehouses in Philadelphia. It is called their No. 2, and has a cylinder adapted to corn, beans, peas, &c., in addition to the brush used for the smaller seeds, turnips, carrots, &c. No. 1 Seed sower is generally used for these latter, and can be bought for about six dollars and fifty cents. The cylinder and brush work by gearing, and drop any varieties of the smaller seeds with great evenness and regularity. Several thin slides, with different sized holes accompany each machine.

It will be observed in the engraving, that the drill or gutter made to receive the seed, the dropping, covering and rolling, are all performed at one operation. It seems needless to enlarge upon the advantages of drilling with a machine like the above, compared with the fatigue of stooping and sowing by hand. It not only saves valuable time, but performs the operation from first to last *much better*, and often is a material advantage not only to the early growth, but final product of the crop.

Many farmers are deterred from putting in a crop of roots on account of the time required to sow the seed, and the difficulty of doing it properly. To such we would recommend the above drill.

Ruta Bagas.

As it is now pretty well understood that the hay crop in eastern Pennsylvania will be a very short one the present season, (in many places probably not half a crop), we would again urge those who have so far neglected other crops to supply this deficiency, to plant liberally of Ruta Bagas. The middle of July is ample time to sow them, and for either cattle or sheep, they will be found a valuable aid through the coming winter. When hay is eight or ten dollars per ton and grain also cheap, a farmer may afford to throw it out lavishly, even when a large part is trampled under foot, and goes to make manure. But next winter, unless we are greatly mistaken, economy in feeding will be the order of the day. From six hundred to one thousand bushels of Ruta Bagas may readily be raised on an acre. These are not only valuable for food in themselves, but by their succulent and juicy properties, greatly promote the health and thrift of the stock, and thus indirectly enhance the value and efficacy of other food. Roots are highly relished in the winter, owing to the absence of all other green food, and there is no kind which can be raised so *cheaply* as Ruta Bagas. They will readily succeed a crop of early potatoes, and when once planted require no attention till after harvest, when they should be thinned out to proper distances, and the ground kept well stirred with the cultivator, till their leaves expand

sufficiently to shade the ground. Ridging is sometimes recommended for this and other root crops, but we think should be avoided most especially. It may do in England where an *excess* of moisture is the prevailing difficulty, but here we have most to fear from hot summers and drought. The rows should be two and a half or three feet apart, so that a horse can travel between them, and if the ground has been well and deeply plowed, manured and kept clean in their early growth, they will soon grow so rapidly as to take care of themselves. One and a half pounds of seed is sufficient for an acre. The turnip drill of Ruggles, Nourse & Mason, of Boston, is a capital one for drilling turnip or other seeds, is decidedly the best in the market. It is *simple, well made* and *effective*. Making the drill, dropping the seed, covering and rolling it afterwards, all at one operation. It is propelled by hand power, and can be obtained at the different agricultural warehouses in Philadelphia. Price from six to six dollars and fifty cents.

Making French Drains.

Our friend Frederick Sheeder, of West Vincent, Chester County, writes us a long letter respecting his experience in making French Drains, with some practical advice on other subjects, which we are unable to find room for in this number. He has French Drains made twenty-two years ago, still permanent, where instead of boards in the bottom, as we recommended for soft ground, he dug out a considerable portion of the clay, and then filled it with small stones which he rammed down tight. In other cases where the boards were used, in a few years they rotted out, and the drains had to be made over.

He thinks a complete, well made drain, will last as long as the world lasts, provided the flag or covering stone does not give way. Instead of covering the top of the drain with tussocks, shavings or tan, which will in time rot and allow the soil to work through, he levels off the top with fine stone broken or pounded up for the purpose, so as to make it hard and impervious. F. Sheeder, was one of those who early commenced using lime and plaster, and encouraged his neighbors to do the same. This was fifty years ago, when he first settled in Chester county, and when the benefit of these fertilizers was not so generally acknowledged as at present.

He also we find, watches the "signs," in cutting briars, felling timber, setting down worm fence, &c., and says any one may prove the thing by placing two stones of equal weight on the ground, one in the "*down sign*," and the other in the "*up sign*," and at the end of six months, one will be found to have sunk much more than the other, and refers to other similar experiments. We never had the least faith, in any of these signs, which however we are aware, are conscientiously believed in by a large number of farmers. We have never been able to discover the philosophy of the theory.

Guano Frauds.

The late numbers of our agricultural exchanges to the North and East, contains statements of discoveries to adulterate Guano, and sell it under false colors. They state that at an establishment near Newark, New Jersey, Mexican Guano has been mixed up with plaster, salt, sugar house scum, Peruvian guano, and quick lime, the whole ground up together, put in bags and marked "*Chilian Guano*." The modus operandi is as follows:

"The bags are first marked, CHILIAN GUANO; they are then moistened with water, and laid in a heap, in layers, *with a quantity of Peruvian Guano between each layer*.

The sugar-house scum is pounded fine. Three barrowfuls of "five half-bushels" each, then are mixed with six barrowfuls of Mexican guano. To this are added one and a half bushels of common salt, one bushel of plaster, three bushels of Peruvian guano, and a half bushel of quick lime. When the Peruvian guano and lime are added, "they make it tremendous strong." In other words, the lime sets free the ammonia of the Peruvian guano and gives the manufactured Chilian guano a strong smell of hartshorn, which, to the unreflecting, is a sure indication of a valuable guano.

The floor where the bags were filled, was covered with Peruvian guano, in order to make the article look as much like genuine guano as possible."

The mixture has been analyzed by Prof. Carr, chemist to the New York State Agricultural Society, and resulted as follow:

Water	4.0
Sand	2.4
Organic matter	15.3
Phosphate of lime	24.5
Sulphate of lime, (plaster)	9.5
Chloride of sodium, (common salt)	6.2
Carbonate of lime, (chalk)	37.6
	99.5
Ammonia	1.6

Extensive efforts have been made to dispose of it both in New York and Boston, as well as south, the price asked being thirty-five and forty dollars per ton, its real value being about thirteen dollars.

As this appears to be a deliberate attempt to impose on the farming community, we hope the guilty parties whoever they are, will be ferreted out and their names published. In matters of this kind, we dislike all indirect hints and inferences. Let the charge and proof, be broad, plain and direct, so as not to be misunderstood.

Prof. Way, on Butter Making.

In a recent lecture by Professor Way, before the Royal Agricultural Society of England, "on the chemical principles involved in the production of butter," he gives it as his opinion "that a gentle, combined, centrifugal, and ascending motion of the milk during the process of creaming, would tend to make the cream rise rapidly.

This is so entirely opposed to all the practice of our best dairymen, who consider the least disturbance of the milk-pan injurious, that we should be pleased to hear their opinions on Professor Way's theory. He thinks "such a motion by means of weights and springs, can be given to the milk pans on slowly rotating tables, the sides of the pans having flanges on the inside sloping from the top to the bottom, which would communicate an ascensional motion to the liquid."

As Professor Way, is one of the highest authorities in England on scientific agricultural topics, we hope our friends around Philadelphia who are dairymen, will give their opinion of this new theory.

Pedigrees of Stock.---Herd Book Animals.

While improved stock are bringing their present extraordinary prices, which appear likely to continue for some time to come, it seems desirable that the subject of *Pedigrees* should be well understood. There is a vast deal of misconception about it, often to rather an amusing extent. Many an animal of fine appearance sells at *comparatively* a low figure, because his *pedigree* is said to be deficient, or, in other words, the *names* of his dam or sire, grandam or grandsire, cannot be stated. Many an uncouth and unsightly animal, *in some points*, brings a high figure, say one thousand dollars, because his *pedigree* is said to be perfect, or, in other words, the *names* of all his ancestry on both sides runs so far back as to make it useless to go farther. There is no interruption in it, or want of connection.

Now we wish to impress the fact, that in this latter instance the animal *may be* more worthless than in the other. As an illustration, suppose a person in the present day to be able to trace back clearly his descent for one hundred and fifty years, from a man who was swung off from the scaffold. The pedigree, although *perfect*, is a *bad* one; and so with animals. The simple fact of the *names* of all a cow's ancestors being recollected, or even registered in the Herd Book, is not *of itself* sufficient evidence of her being valuable. We do not care for *names*, but *things*. The more and the longer pedigree a cow or bull may have, the more undesirable they *may be*, as it perhaps involves the possession of *bad* qualities, which it is necessary to breed *out*, instead of crossing to obtain. A great many very indifferent animals are registered in the English Herd Book, which no judge of stock, anxious to improve his herd, would desire to own. On the other hand take the case of the Duchess family of Short-horns. Here is a family of Durhams, who, so far as they can be traced back, have been remarkable for their *superiority* in certain valuable points of form, size, neatness, easy feeders, fine milkers, &c. A Duchess cow of the present day not only can have her pedigree traced back in respect to names, but these names represent animals which are *known* to have been very superior; and on the principle that like produces like, the probabilities are that those qualities will be inherited by their descendants. This is the reason that the Duchess, Princess, and some other families of Short-horns, always command such extraordinary prices.

We would say to beginners, desirous to improve their stock, do not pay for merely high sounding names, unless you know what they represent, whether excellence or the contrary. We would rather commence with a good common cow (a deep milker), and cross her with a well shaped bull, whose ancestors for two or three years we knew something about, in order to accomplish a certain degree of improvement in a *given* time, than to breed from animals with long pedigrees, of which we knew nothing.

No one estimates higher than ourselves the importance of a *good* pedigree, but we wish it fully understood that it is not necessarily *good* because it is *long*. It may be much the worse for being long, but it is not necessarily on that account *good*. Imagine the case of a Durham cow (thorough-bred), so called, with a light or deficient hind quarter. She may, although a herd book animal, have inherited that defect from an ancestor twenty-five years ago, which has been carried down through successive generations. We assert that it would be more difficult to raise a calf from her having a heavy hind quarter, than from a *common* cow who was defective in that point, but only as an accidental property or peculiarity. We would encourage every farmer to keep a book—a herd book of his own—in which to register the names of all his permanent stock kept for breeding—cows, sheep, pigs, &c. It will be found vastly convenient and useful, and enable him to cross his animals with more judgment, and preserve more readily their desirable characteristics.

Liability of Nurserymen.

J. L. Darlington, Esq:—Please give me through the Farm Journal, your views as to whether or not redress by law can be had from a nurseryman, by whom I have been terribly imposed on with a lot of trees, costing over two hundred dollars; out of three hundred and fifty trees, fruit and ornamental together, but twenty-five are now alive. My neighbors tell me there is no help for it, and that I had better keep quiet, but it has been my rule through life not to submit to imposition, and if there is any law in the land to meet the case, I intend to incur the expense of testing the question for my own and the *public* benefit. With the exception of three or four bundles which had been badly rubbed in the railroad cars, the trees were in *apparently* good order. It must have been only *apparently*, as the result proves they must have been badly grown and unhealthy Being engaged at my usual business in the city, I left the planting with my two Irishmen, charging them particularly to do it carefully, and they are willing to be qualified every pains was taken, and that they had never worked harder than during the two days they were engaged at it. Wishing to neglect nothing, I have also had them watered every evening for three weeks, during the dry weather, and after all my pains, expense, and anxiety, the result is as stated.

Now Mr. Editor, if I buy a barrel of apples warranted sound and on opening find four-fifths are rotten, and if I buy a piece of dry goods, silk, woolen or muslin, and find on opening the bundle they are moth eaten, or otherwise damaged, I have a right to return them and get my money. This seems plain, common sense, whether it is *law* or not. Please give us your opinion, as I have reason to believe mine is not a solitary case.

Philadelphia. A. HIBBART.

In answer to our correspondent, we would reply that if he has a *needy* relative who is a lawyer, and wanting business, we would by all means recommend him to appropriate five hundred dollars as a fee, in order to "test the question" fully. It would not only be patriotic, but an acceptable *charity*, as we know young lawyers commencing business are very often in want of cases and funds. We have no doubt the verdict of a jury for all that appears in his statement above, would be for the

defendant, and plaintiff to pay the costs. It has often appeared to us most singular, that the fault of an orchard not bearing, or dying out prematurely, should be as a *matter of course* attributed to the *nurseryman*. He is truly responsible only, for trees being thrifty and healthy when they pass out of his hands, for their being true to name, rightly directed, and well packed. Beyond these he has no *control*. He does not go with them to see that they carry safely. He does not plant them, or give them attention afterwards, and there is not even "*common sense*," in his being held liable for the ignorance or carelessness of others. *His* duty is discharged when they are placed on the car or boat. To *plant trees properly*, to prune them judiciously, to give them as much and no more water than they require, to mulch the surface, to keep the bark healthy, pliable, and free from moss, &c., are matters for the *purchaser* of trees to study and attend to, and unless he does, it is folly to plant them and expect either fine fruit or healthy foliage. Our friend Hibbart appears to have left the responsibility of what is *always* and *necessarily* an operation requiring the greatest skill and judgment, with two Irishmen, and the style in which they performed it, may be readily inferred from the *fact* that it occupied only two days, whereas no two skilful and experienced men, entirely acquainted both with the *theory* and *practice* of tree planting, could have planted three hundred and fifty trees as they ought to be, in less than a week, and not in that time without other help.

Why three weeks drenching with water, would drown the life out of any tree before its leaves were developed, without any other cause to produce death.

As they were "apparently" in good condition when they arrived, the presumption is very clear that the nurseryman had done his part, and that the failure was owing to other causes.

Unless our friend has more money than he knows what to do with, he had better take his neighbor's advice.

The case stated about a piece of cloth, is not at all applicable. If when opened it was in good order and had become moth eaten afterwards, he would hardly ask redress, and this appears to have been the case with the trees.-ED.

Portraits and Plaster Casts.

We have received from Samuel Thorn, Esq., of Thorndale, Duchess county, N. Y., a pair of beautiful portraits, of his Short Horn Bull Grand Duke 10,284, and Short Horn Cow Duchess 64, bred by the late Thomas Bates, of Kinkleavington, England, and imported by Jonathan Thorne, father of the present owner. Grand Duke cost in England one thousand guineas, and Duchess six hundred guineas. Too much credit cannot be given to the enterprise that thus, regardless of cost, procured the best stock in England. We have also received from the same gentleman, plaster casts of a couple of his Southdown Sheep, which are beautifully executed, more so than anything we have seen of the kind in this country. Their fine proportions and perfection in the most valuable points of the carcass, make them fit subjects for study, and they would be valuable for any farmer, engaged in breeding sheep, to keep such models before him, as a standard for comparison with his own flock.

Catawissa Raspberry.

The Catawissa raspberry originated in the graveyard of a little Quaker meeting house in the village of Catawissa, Columbia county, Penna. The fruit is of medium size, inferior to many of the new popular varieties, but is sufficiently large for all economical purposes. Its color is dark red purple when ripe, and is of a very high flavor. It bears most abundantly after the young wood, on which it produces its best fruit, attains a height of four or five feet; usually begins to ripen early in August, and even sooner. The fruit is produced on branches continually pushing out from all parts, successively appearing in various stages of growth, from the blossom to perfect maturity; and often there may be counted more than fifty berries on a branch. As the fruit of each branch successively ripens, the later ones gradually diminish in size; but there is no suspension of blooming or fruiting, before the plant is checked by frost. If protected in doors, it undoubtedly would produce during the winter months. One great advantage of this over other varieties of the raspberry is, that if the stocks should be accidentally broken or cut off, or should be killed by winter frost, it is all the better for the crop. Another advantage is, that from the small space of a few yards well cultivated, a daily dessert for a small family would always be at hand for from three to four months of the year.

Pat. Off. Rap.

The Jujube Tree.

The seeds of this tree were imported a short time since from the south of Europe for experiment in the South. It grows in the form of a shrub of middle size, bearing a red oval fruit about as large as olives, inclosing a stone of the same shape. They are sweet, but only eaten among us in the form of paste. In Algiers the fruit ripens in the month of June, and is much sought after by the inhabitants, who consume large quantities, both fresh and dried, as well as in the form of a delicious paste.

Ib.

Cuttings of the Zante Currants

There has been introduced from France the cuttings of the Zante currant—a variety of small grape—which have been distributed in the Middle and Western States. This variety of fruit, so well known as entering into the composition of some parts of domestic cookery, should it succeed, will add to the numerous varieties of choice fruit which have been introduced within the last few years into this country. *Ib.*

Chester County Agricultural Society

The annual election of this society was held on the 30th ult., and the following officers chosen for the ensuing year:

PRESIDENT, Isaac W. Van Leer.

VICE PRESIDENT, Paschall Worth, Dr. E. V. Dickey, Lewis Brinton, Richard Pim.

RECORDING SECRETARIES, James H. Bull, Wm. Torbert Ingram.

CORRESPONDING SECRETARY AND TREASURER, J. Lacey Darlington.

EXECUTIVE COMMITTEE, Dr. George Thomas, Nathan Walton, Abner Garrett, Marshall B. Hickman, Jos. Cope, Lewis Sharpless, Albert Hoopes, Benj. F. Bartolet, Thos. S. Woodward and Caleb Brinton, Jr.

Memories.

BY J. G. WHITTIER.

A beautiful and happy girl,
With step as soft as summer air,
And fresh young lip and brow of pearl,
Shadowed by many a careless curl
Of unconfined and flowing hair,
A seeming child in everything;
Save thoughtful brow and ripening charms,
As nature wears the smile of spring,
When sinking into summer's arms.

Years have passed on, and left their trace,
Of graver care and deeper thought,
And unto me the calm cold face
Of manhood, and to thee the grace
Of woman's pensive beauty brought.
Of Life's rough blast to blame or praise
The school boy's name has widely flown;
Thine in the green and quiet ways
Of unobtrusive goodness known.

And wider yet in thought and deed
Our still diverging paths incline;
Thine the Genevan's sternest creed,
While answers to the spirit's need
The Yorkshire peasant's simple line;
For thee the priestly-rite and prayer,
And holy-day and solemn psalm;
For me the silent reverence where
My brethern gather slow and calm.

Yet hath thy spirit left on me
An impress time hath worn not out,
A something of myself in thee,
A shadow from the past I see,
Lingering even yet thy way about,
Not wholly can the heart unlearn
That lesson of the better hours;
Not yet has time's dull foot-steps worn
To common dust that path of flowers.

Thus while at times before the eye
The clouds about the present part,
And smiling through them, round us lie
Soft hues of Memory's morning sky;
The Indian summer of the heart,
In secret sympathies of mind,
In founts of feeling which retain
Their pure fresh flow, we yet may find
Our early dreams not wholly vain.

A mind rejoicing in the light
Which melted through its graceful bowers,
Leaf after leaf serenely bright
And stainless in its holy white
Unfolding like the morning flower;
A heart, which, like a fine toned flute
With every breath of feeling woke,
And even when the tongue was mute,
From eye and lip in music spoke.

How thrills once more the lengthening chain
Of memory at the thought of thee!
Old hopes which long in dust have lain,
Old dreams come thronging back again,
And boy hood lives again in me;
I feel its glow upon my cheek,
Its fulness of the heart is mine,
As when I leaned to hear the speak,
Or raised my doubtful eyes to thine.

I hear again thy low replies,
I feel thine arm within my own,
And timidly again upraise
The fringed-lids of hazel eyes
With soft brown tresses overblown;
Ah, memories of sweet summer eves,
Of moonlit wave and willowy way,
Of stars and flowers and dewy leaves,
And smiles and tones more dear than they.

Ere this thy quiet eye hath smiled,
My picture of thy youth to see,
When half a woman, half a child,
Thy very artlessness beguiled,
And folly's self seemed wise in thee,
I too can smile, when o'er that hour
The lights of memory backward stream,
Yet feel the while that manhood's power
Is vainer than my boyhood's dream.

Cost of Raising Wheat, Corn, &c.

The next volume of the N. Y. Agricultural *Transactions*, will contain a detailed farm account of MR. WM. JOHNSON, near Geneva, from which we gather the following interesting items in regard to the cost of raising different crops the last season. His statement is published in the Journal of the State Society, for the present month, and shows very creditably the order and method of Mr. J.'s agricultural operations.

The farm contains 80 acres of tillable land divided into nine lots, numbered from one upwards, and accurate account kept with each. The soil is a dry loam, with a clay subsoil, pretty uniform throughout the farm. Each crop is charged with the interest on the value of the land producing it, and with all the labor and material used in its production. Of wheat six acres were sown, the whole expense was $122,40; the product was 126 bushels or 21 bushels per acre; this makes its cost per bushel a trifle over 97 cents. But deducting the value of the straw, estimated at $18, we make the cost of the wheat but 83 cts. per bushel. It was sold at $1,81, leaving a fair margin for profit at either figures. But at the price of wheat for many years past the profit would have been little or nothing.

Eight acres of Barley cost $102,20 and produced 284 bushels, or 35½ bushels per acre. It cost nearly 37 cts., and sold for $1,00 per bushel. This produced a greater per cent. of profit than the wheat, as we believe it generally has, for a series of years.

Ten acres of corn on clover sod cost $153,26. The product was 410 bushels of corn and $60 worth of corn stalks. Mr. JOHNSON states the cost of raising the corn at 37½ cts. per bushel, but if we deduct the value of the stalks from the whole expense it makes the cost of the corn but 22¾ cts. per bushel. We should be glad of some explanation from Mr. J. on this point, as the value of the stalks and straw may have been allowed to balance some part of the expenses not indicated.

Ten cows are kept upon the farm, yielding an average of 210 lbs. of butter each. Mr. J. estimates the product of each cow worth about $54, and the cost of keeping $26,85. It cost 12½ cts. per lb. to make butter, on Elmwood farm, and we think it cannot be sold for less anywhere with much profit. His pork killed at 9½ months old, fed on milk and fattened with corn, costs 5 cts. per pound. The balance over expenses on the whole farm, for last year was $953,42.

Mr. JOHNSON practices the following system of rotation. 1st corn, to which is applied all the unfermented manure he can get. The next spring it is sown with barley at the rate of 2½ bushels of seed to the acre, then sown to wheat in the

fall, with a top dressing of fine manure, of about 6 loads to the acre. The following spring it is sown with 8 quarts of clover seed and 4 quarts of Timothy, with one bushel of plaster per acre, when it is allowed to remain three years in grass. The usual product is 55 bushels of corn, 30 of barley, and from 20 to 30 of wheat, per acre. The manure is all kept under cover and a regular system of underdraining is being carried out. We should be glad to receive further particulars of the latter, for the benefit of our readers.—*Rural New Yorker.*

For the Farm Journal.

Rape.

Your correspondents N. L. and F. A. N. differ in opinion on the subject of rape. Having practised agriculture in countries where this plant is extensively cultivated, my views on the subject, in accordance with those of the best practical agriculturists of Continental Europe, may perhaps not be without any interest for your readers.

Rape is cultivated in England for early pasture, but less and less. Its cultivation for the purpose of oil making would not pay as it is no sure crop, and the prices of breadstuffs and animal produce are always high. All rape cake that is fed or employed as manure is there imported.

Rape is extensively grown in all the most fertile districts of North Western Continental Europe. Its cultivation can be of advantage only on fertile, not too clayey, freshly manured lands, with well draining or well drained underground, and on farms with an abundance of manure, on other places it is at the utmost, of temporary profit and soon exhausting.

Rape requires a careful, deep culture, which has to begin in spring so as to give the sward time to rot between the repeated plowings.

Rape requires only little covering. The sowing is done in August in countries where winter sets in earlier than here and where the fall months are less hot but generally bring much more rain. The seed is sown broadcast, or what is much better, and now done almost exclusively drilled in. The drills are from eighteen to twenty-four inches apart. The quantity of seed required on an acre when sown in drills is from seven to ten lbs. I perceive that N. L. sowed his rape and then planted out. In Europe it is immediately sown over the whole field and not transplanted. Such a process would be more expensive, and make the crop less sure, because these transplanted seedlings often die in dry, and are more tender in wet or cold weather. When rape is put in drills, earth is brought up to the plants once or twice in the fall with the double mouldboard plough, and once early in the spring, provided the ground is sufficiently dry.

Winter rape is an uncertain crop, it suffers from winter wet and open frost, (there is generally more snow and a dryer and intenser cold in the north of Continental Europe, than in Pennsylvania,) from the flea, caterpillars and scarabees, which last ones, getting into the blossoms, often destroy the most promising crop. (F. A. N. will not always find these enemies driven into the sea, and perchance experience that certain insects generate in larger quantities by the more extended cultivation of certain plants.) If we well cultivate and manure rape on appropriate ground, we assume from five crops three complete ones. Harvesting takes place in the beginning of July, (in Pennsylvania it would probably in the middle of June). The pods when dry burst easily and the grain is lost, therefore one prefers to take in the rape not too dry and thresh it immediately, because standard grain suffers by the development of heat in the barn in many places one brings it even on large cloths spread in the field, and threshes it there. Rape will sometimes give thirty-six bushels to the acre, I have seen forty-five, but often crops will fail entirely, so that on good soil, with good culture, the average result from an acre, cannot be calculated more than twenty-four bushels to the acre, whereby one has to consider that it gives less to the barnyard than surer crops.

Rape certainly can be cultivated here notwithstanding it will be a still less sure crop than in North Western Europe as the weather is rather too dry in the fall, more wet and changeable, in winter with more open frost here than there. The cultivator would be paid worst just as in Europe, near the large (Eastern) markets, where animal produce is very high priced, often higher than in London; it would pay best in the fertile lands of the west provided one can work the soil sufficiently and get hands enough for harvesting. In the west too, the manufactured oil will sooner bear the competition of imported animal and vegetable oils, and the cake will find a remunerating sale; it will be unprofitable when the prices of grain are very high, as now, but bring ready money in the hands of western farmers when grain is low. O. R.

How to Destroy the Onion Fly.

MR. EDITOR:—I notice, in the last number of the Farmer, your desire of information in regard to the destruction of the onion fly or a remedy against its ravages. If your "old friend," and others that may have been pestered with its presence, will follow the course pursued by me for the last three years, with satisfactory success, they may again pride themselves upon having a good kitchen garden.

I sow in trenches, with a good supply of seed soaked in warm water, (stirring in plaster to dry the seed, also making it far better for sowing.) As soon as I see the *first* wither, from the maggot working at the root of the plant, I heat water in proportion to the size of the bed, throwing in while boiling a quantity of tansy. While hot, pour the liquid from a sprinkler (without the rose) or a large coffee pot around the roots, but care should be taken not to pour it on the stock. I think clear water may answer the purpose. The maggot being tender is easily killed by the heat.

I have gathered large sized onions with a hole between the roots (caused by the tormenter while small) as large as a filbert, which were saved by one application only of the above remedy.—*G. E. C. Maine Farmer.*

For the Farm Journal.

Influences of the Moon on Agriculture.

MR. EDITOR:—In your last April No. of the Farm Journal, a gentleman subscribing his name "A. W. C., gives some experience he has had concerning the influence of the Moon on certain objects. I have gone some farther than he in making experiments, and watching what effect the moon might have on objects. I have been farming for myself forty-seven years and have watched the signs of the moon fully, to satisfy myself. In the first place, what influence has the moon on cutting timber? about forty years ago one of our neighbors put up two or three hundred panels of post fence; twenty years after the fence was good; there was great inquiring when the timber was cut; it was said to be cut in the dark of the February moon. I cut posts and rails in that sign, put up my fence, and in eight years it was rotten. The sons of the man (who put up the above mentioned fence) say, it could not have been in February the timber was cut, for they remember playing in the woods making bark whistles while their father was cutting it; they say it was in May. I know by experience that timber cut in May will last twice as long as that cut in February, without respect to the moon; the reason for this is, that in May the sap flows up out of the wood and gathers under the bark

and in it; so, that timber cut in May is not subject to the rotting influence of the sap, which in February or the winter time has returned into the wood filling every pore. Some think the sap goes down into the roots of the trees in winter, which is evidently not so; for cut a tree in the dead of winter, let it be until May; it will then peel off its bark almost as well as if it had been cut after the sap begins to flow; which proves that the sap lies embedded in the wood during winter—and timber cut when it is in that state is subject to rot, or be eaten with worms.

I had a fair trial of cutting hickory in the new of the moon; the dry spring, ten years ago, I had a grove of hickory saplings which I cut in March; about the time I was finishing, a cooper came along, wishing me to let him cut some hoop-poles on the mountain land; he said, two days more the moon would full, and any cut after that the worms would destroy. I told him my disbelief in it, but said to him, I have just hit the time in cutting my hickory poles, for they have all been cut in the new of the moon. In August, I hauled them off; they were dry and hard; I piled them two or three wagon loads in a place. In the winter I hauled them away and there could have been bushels of worm-dust gathered under the pile; they were so much destroyed that in five or six loads I could not get so much of a pole as would make a sound wedge. There was a large hickory I left standing until May; I then cut it; some of that tree lay out for four or five years and no worms ever touched it. So I believe that instead of looking to the moon, we should look to the flowing of the sap as a good time to cut timber. It has been said that there are two days in August, in which if briers or sprouts are cut, they will not grow again; it will generally kill briers to cut them in August, from the fact, the weather then is warm and dry, the briers in full growth, and full of sap, which sours; this, with the heat and dryness of that season of the year, it being too late for vegetation to start again, gives the brier but little chance for life; but it is in no particular days, or the moon. As for sprouting on those two days in August, when I first heard of it, I had seven acres of new land, off of which no crop had been taken; there were a great many sprouts on it. I had it well sprouted on those two days, but when I came to seed in September there were sprouts from six to nine inches long, three to one I had cut off in August. Now for the horns of the moon being up and down, what effect has it? in this I have had some experience I laid a stone on the grass when the horns of the moon were up, and when they were down I laid another; some months after I lifted them and if there was any difference, the one laid down first (although the supposed effect of the upturned horns of the moon keeps from sinking) was sunk most. The cause of anything sinking or not sinking when laid on the ground, is owing to the state of the ground; lay any thing down when the ground is wet, and it will kill the grass and sod and sink a good distance in the ground; whereas, if it be laid when the ground is dry and hard, it will not kill the grass for a great while, nor sink much in the ground (let the horns be pulling either up or down). By observing a little, this effect may be seen by the farmer in harvest; in shocking grain if the ground be wet, the shock will kill the clover, both top and roots; if the ground and weather be dry, the shock may stand a long time and it will be found that the clover will be alive and growing. I once spread manure on a meadow after a heavy rain; the sun came very warm, and in a few days the manure was sticking on the top of the grass like mushroons; the sun dried the moisture out of the manure, it became very light and the fast growing grass lifted it up, not the upturned horns of the moon.

In laying the worm of a fence when the horns of the moon are up, to keep it from sinking, and to stake a rider when they are down to keep it down; in driving shingles when the horns are down; in setting posts when they are up to make the post keep its place; how ridiculous! If the moon had these supposed effects, would it not be absurd to plant, reap or build, in any of the signs? for it would be an alternate pulling up and down as the moon would change, so that its effects would amount to nothing at last.

I am now seventy years old, and I do not think I have had an increase of one year of corn or grain of wheat, through the influence of the moon in sowing or planting in its signs. There are people in this county who look to all the signs in the almanac for some purpose. I cannot see anything in scripture or reason to make me believe that there is anything in them. The scriptures speak of tilling the soil, of digging and manuring, and the husbandman to look for the early and latter rain; and Solomon says, "sow your seed in the morning, and in the evening withhold not your hand, for you do not know which will prosper;" but says nothing of any signs.

Those who look to moon signs, remind me of one of my neighbors telling me how to make good vinegar; while pouring in the ingredients, he thought of three of the *crossest women* in the neighborhood; pouring in he would first think of cross Sally; pour on, there is cross Jinny; pour on, there is cross Nelly. He makes use of the *best* material for vinegar and always has *good*; but he thought it all depended on the cross women. What folly to think that old women haae anyinfluence on the vinegar. Just so, those, who look to the signs of the moon, are in general good farmers; they plow, harrow and manure well, and have good crops as the result; but they look to the moon for the increase, on which it has no more influence *in the way they think it has* than if they should hang up their hat in the field.

But there are things on which the moon has great influence, such as water, the ebbing and flowing of the tide; on the minds of insane persons, the ripening of grain and fruits, &c. These influences are owing to its attractive power on the first, and its light on the last two named objects, and some others that might be mentioned.

SAMUEL ALEXANDER.

Near Lewistown, Mifflin Co., Pa.

Manures.

[We find the following article by our friend Wm. Stavely, Esq., in the Doylestown Democrat, and transfer it to our pages with pleasnre. We should be pleased to have him and a few more like him, communicate directly with the Farm Journal.—Ed.]

Mr. Editor:—In looking over an article in your last paper, *"Plant Summer Grain,"* my attention was particnlarly directed to that part where you refer to hauling out manure for corn and potatoes. I do not know that anything I can say will enlighten the intelligent farmers of Bucks County, or that they will deem any remark from so humble an individual as the present writer of any importance. I am willing myself to receive instruction from the most illiterate tiller of the soil; and I am candid in remarking, that I have often received some excellent hints fron the unobtrusive suggestions of the operatives employed upon our farms. At all times, searching after any improvement in agriculture that may throw light upon the profession of my choice, I think it the duty of farmers generally to impart their experience for the benefit of others.

For some years past it has been my practice to haul out all the mannre, in a suitable condition, for corn and potatoes. I commence hauling late in the fall, and if practicable spread

at the time. Where I spread the first load of manure hauled in the fall, I usually have the best corn the ensuing season. My reasons for this course are the following. By hauling out manure in the fall, winter and spring, I get into my fields all, that is at all suitable for this purpose. In this way, the decomposition it must undergo in the barn yard, takes place in the field, and imparts thereby nourishment and strength to the growing crop. A field manured in the way referred to, last year, produced *seventy-five* bushels of good sound corn to the acre; while a field of the same size and soil of like quality, without manure, produced but forty-five bushels per acre. Practical experience is preferable to theory. But to return to my statement. The manure once out of my barn-yard, I immediately commence littering up, with every available material, to act as an absorbent of the juices of the yard; and I find, that by the time oat-harvest is over, I still have sufficient to cover over a thirty-acre field for wheat. Had all remained in the yard until after harvest, no one, that has not tested the matter practically, would believe the reduction the bulk of manure would undergo. I have now, at the writing of this article, hauled out manure sufficient for forty acres of corn and potatoes; and I expect, after oat-harvest, to have made sufficient to cover over thirty acres for wheat.

When I plow for oats in the spring the field manured the year previous for corn, I usually sow it with clover seed. The mellow and friable condition of the soil, from the effects of the manure, renders the chance for a crop of clover almost certain. This field, the following year, I pasture to some extent, and then make open fallow of it for wheat, without any further manuring, excepting possibly upon a dry knoll or two.

I have now a twenty acre field of wheat, seeded the 7th day of last September, in this way, *without manure*, that will vie with any field I have yet seen this season. The manure was hauled upon a thirty acre field, which had been in oats, and seeded with wheat on the 11th and 13th of September; but this does not look near as well as the field first referred to. I believe a *good clover sod*, without manure, usually a better chance for wheat, than oats stubble manured in the usual way.

I place but little reliance upon the *analysis of soils*, so much talked and written about in these days of *wonderful improvement*. Take, for instance, the farm upon which I reside. I do not believe that any ten rods will bear a like classification of soil. Hence then the difficulty of ascertaining the component parts, and of applying artificial manures with certainty. This being the case, I rely mainly upon lime and barn-yard manure to keep up my farm. I have used artificial manures, but only to a limited extent; and I cannot say, in any case, with much advantage. I know that many farmers say they derive great benefit from the use of guano; and I have no doubt, *when the season suits, and they get a pure article*, this is the case, particularly on worn out lands. But how many are there who will tell you, that they have tried all without any apparent advantage. This may be owing, in part, to the uncertainity of what a man gets when he buys guano; and until there is some sure method adopted to protect the farmer in the purchase of this, no doubt, valuable article, and the many *nostrums* of the day manufactured to get his money, I for one, for the present, prefer to stick to the old plan of lime and barn-yard manure. In this method there is no doubt or uncertainty. The farmer is sure of a beneficial result.

Admitting guano to be highly beneficial, will it pay at its present high prices? With a judicious use of all the material about a farm for the creating of manure and the preservation of that already made, any farm of an ordinarily good soil, can be kept in a fine state of improvement, with but little outlay for manure, and gradually made to increase in value.

With these few plain remarks, hastily thrown together, I leave the subject, with the hope that some of our more able and enterprising farmers will take up their pens and communicate their views in like manner.

Partridge Hall Farm. WILLIAM STAVELY.

Lime Spreaders Again.

MR. DARLINGTON:—SIR:—In your Farm Journal I see one of your correspondents complains much about his Mowing Machine and Lime Spreader, &c., &c. I have one of Cooper's Lime Spreaders, and have spread six thousand bushels of lime on about one hundred and fifty acres of land; two thousand five hundred last spring, and three thousand five hundred this spring. I put two hands with it and they spread on the average, about seven or eight acres a day; some days they would spread ten acres, owing to distance they had to haul the lime. The lime was in good order mostly, as I don't wish to put it on my land in any other way, not wishing to lose its virtue; which I believe would be greatly the case if spread in a wet condition, no matter with what kind of machine or implement applied. An old maxim is that "whatever is worth doing at all is worth doing well"; therefore, if liming is of use it is fair to do it in right order; which certainly can be done with the Lime Spreader I got of Mr. Cooper, if the lime is in any kind of good order. I would not willingly spare my machine for four times its cost, which was (including expense of transportation eighty eight dollars and thirty three cents, the freight being eight dollars and thirty three cents. I think the machine is worthy of a good name, and the inventor worthy of patronage for making such a machine. I offer this gratuitous mite on his behalf hoping that you will give it space in your columns without the hope of a "Silver Plow" being awarded to me for endeavoring to set the Farmers right with Lime Spreaders. Truly yours,

J. V. AIKEN.

Baltimore. Md., June 21, 1855.

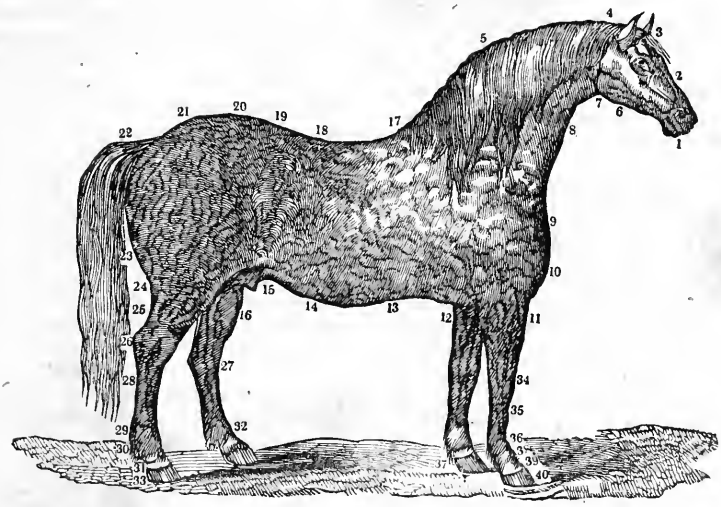
Chester County Horticultural and Industrial Exhibition.

The June semi-annual display of this Society, came off on the 21st, 22nd, and 23rd ult., at West Chester; and taking all things together may be considered the most successful of any yet held.

We understand on the last day and evening, over two thousand and three hundred tickets were sold; showing a continued interest on the part of the people of the county, in getting up and sustaining these Exhibitions. The display embraced as usual, not only fruits, flowers and vegetables, but also specimens of mechanical skill and ingenuity, fine arts, &c., highly creditable to the county. Roses, of some sixty varieties, Green-house plants, many of the rare and beautiful specimens, Evergreen trees and shrubs, &c., were contributed by the nurserymen. Cherries and Strawberries of fine quality and great variety also of them, and other fruit growers; vegetables in profusion, many of them of extraordinary size, by the market and amateur growers; and also by various residents of the Borough and county, elegant furniture, paintings, ornamental baskets, worsted work, and embroidery, ottoman covers, dageurreotypes, preserves, &c.

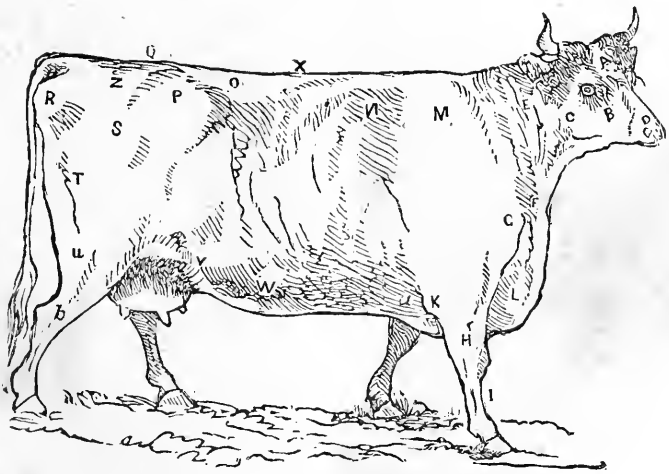
Out of Philadelphia, and perhaps Alleghany, there is no county in the State, but Chester, which *sustains* Agricultural and Horticultural societies in separate organizations. Here they are both working distinct, and yet harmoniously, and both flourish. The Horticultural society has built for itself

a spacious Hall costing over six thousand dollars, now nearly paid for; and holds in *addition* to its regular monthly meetings and Exhibitions, *two* semi-annual exhibitions like the present, which have always been crowded, and there is no doubt will continue to flourish. Its finances will very shortly be in such a condition as to be able to enlarge its premium lists, so as to make them really what premiums ought in all cases to be, *objects of remuneration* to contributors, for excellence or superiority in their contributions. When this is attained it gives a ground-work or nucleus for extended usefulness, and places any society on a vantage ground, where its influence will be more powerfully seen and felt. We are glad that the Agricultural and Horticultural Societies of Chester county will soon be in this enviable position.



Terms Denoting the External Parts of the Horse.

1. Muzzle. 2. Face. 3. Forehead. 4. Poll. 5. Crest. 6. Jowl. 7. Gullet. 8. Windpipe. 9. Point of the Shoulder. 10. Breast or Bosom. 11. Arm. 12. Elbow. 13. Girth. 14. Flank. 15. Sheath. 16. Stifles. 17. Withers. 18. Back. 19. Loins. 20. Hip. 21. Croup. 22. Dock. 22. Quarter. 24. Thigh or Gaskin. 25. Hamstring. 26. Joint of the Hock. 27. Ham or Hock. 28. Common. 29. Fetlock. 30. Large Pastern. 31. Small Pastern. 32. Coronet. 33. Hoof. 34. Knee. 35. Common. 36. Fetlock. 37. Heel. 38. Large Pastern. 39. Small Pastern. 40. Hoof.



External Parts of Cattle.

A—Forehead. B—Face. C—Cheek. D—Muzzle. E—Neck. F—Neck-vein. G—Shoulder-point. H—Arm. I—Shank. K—Elbow. L—Brisket. M—Shoulder. N—Crops. O—Loin. P—Hips, or Huckles. Q—Crupper-bone. R—Rump, or Pin-bone. S—Round bone, or Whirl. T—Buttock. U—Thigh, or Gaskit. V—Flank. W—Plates. X—Back, or Chine. Y—throat Z—Hind quarter. *a*—Chest. *b*—Gambrill, or Hock.

Pittsburgh Horticultural Exhibition.

MR. EDITOR:—I herewith send you the reports of the awarding Committees at the June Exhibition of the Pittsburgh Horticultural Society just closed; from which you will see that the good cause is making great progress in this transmontane region. We had a fine display of flowers and early fruits; and every thing passed off satisfactorily to the Society, because the Exhibitors were many, and showed by their fruits that they had been provoking one another to good works in the cultivation of the soil; and to the public at large, because for three days it spread before their eyes a spectacle of rare plants, choice fruits and vegetables; and satisfied them, that in the production of the kindly fruits of the earth, our own county has advanced pari passu, with other garden spots in our land. This is apparent from the enclosed reports.

The display of Cacti, Fuchsias and Verbenas, was extensive and beautiful,—but in the Floral department, the great attraction was the "Night Blooming Ceres" from the Conservatory of C. F. Spang, Esq. This magnificent plant had thirteen buds well developed, three of which were expected to bloom on the second night of the Exhibition; but owing to a sudden and great change in the weather on the day of its removal to the Hall, it had become chilled, and the expansion of the buds was checked, to the great disappointment of a crowd of visitors; on the last day however, Mr. Spang kindly sent another plant from his valuable collection, which did bloom in the perfection of beauty; while on the same night, the first one having partially recovered from its chilling reception, and as if not to be outdone by its rival, partially expanded three of its flowers, so that we enjoyed a rare treat.

There was also a choice collection of Foreign Grapes from the Grapery of Mr. Spang; large, beautiful and well ripened, comprising the "Black Hamburg, White Cheasselas, Red do, White Frontignac, West St. Peters, and Charge Henling."

Next after the above, perhaps the Strawberries attracted most attention and admiration; especially from the many strangers who visited the Hall, and I think I may say without presumption or boasting, that Alleghany county, Penn., can challenge the world on the Strawberry question. Such, at least, seemed to be the testimony of persons from different parts of the U. S. The chief varieties on exhibition, were Hovey's, Buist's Prize, Boston Prize, Victoria (Keen's Seedling), M'Avoy's Superior, Princess Alicemaude, and Wyatts British Queen. Most of these berries measured in circumference over four inches, very many over five, many over six, and some seven inches; of these, perhaps the greatest favorite for the table at present is the M'Avoy, being large, sweet, and productive. It is objected to it, as a market berry, that it is soft, and therefore becomes crushed in transportation; for the same reason it is not a very desirable berry for preserving, for which purpose the Hovey's and Buist's have been the favorites. Buist's New Prize, is coming into favor with many of our growers and is highly esteemed. Wyatt's British Queen promises to be one of, if not, *the* finest of all our berries, being handsome, firm, luscious, and a good bearer. It has but recently been introduced here, but so far as my observation goes, I would call it No. 1.

The collection of Cherries was very attractive, and drew a crowd of admirers. It comprised the following varieties —Early Purple Guigue, Elton, Black Tartarean, Knight's Early Black, May Duke, Gov. Wood, Napoleon and Flesh colored Bigarreau.

Mr. Howett's eleven varieties of Cucumbers, astonished the uninitiated, by their size and appearance, as well as their weight; the smallest being eleven inches long, and weighing one pound, while the largest measured eighteen inches and weighed two pounds seven ounces; they embraced all the intermediate sizes, and the following, among other varieties, White Spine, Black do., Jeness, Lion House, Man of Kent, Manchester Prize, Lord Kenyon, Emperor, &c., &c.

There were also exibited thirty three varieties of Gooseberries, though it was too early to see them in perfection.

We hope to have another Exhibition in September next, when we would be glad to see our distant Horticultural friends, whether as competitors or spectators. Your obedient servant.

ROBERT M'KNIGHT.
President, P. H. Society.

Pittsburgh, June 20th, 1855.

We are under obligations to our friend, the President of the Pittsburgh Horticultural Society, for the above interesting account of their Exhibition. We regret being unable to publish the award of Premiums, of any one mere local exhibition, as it would entail upon us the necessity of publishing for all the counties in the State and occupy too much of the space of the Farm Journal.

We shall be much pleased however, to receive condensed notices, like the above of all of them.—Ed.

Pruning.

I have lately noticed some of my neighbors, with jack-knife, handsaw, and hatchet in hand, attacking their fruit trees as though they were enemies whom it was their purpose to wound and mutilate and disable by all means in their power. After the battle has been fought I have seen the ground covered with branches, and in some cases with heads and trunks lying scattered in all directions around the scathed and bleeding trees, that remain like wounded and maimed soldiers, after a hard fought conflict. And the trophies of the victory thus obtained are carried off by the whole cart loads in the shape of sound, healthy sprouts and branches, covered with leaf and fruit-bud, and consigned to the wood-pile.

It seems to me, sir, that these good neighbors of mine are trying an experiment to see how much injury they can inflict upon their trees, without destroying their lives. When the Inquisitors stretch a heretic upon the rack, they place a surgeon by his side, with his finger upon the pulse, to decide when the torture has been carried to the limits of human endurance. But not so with our tree-trimmers. They seem to think that there is no limit to the endurance of vegetable life. This subject has often been referred to in your paper, and the evil consequences of such a course have been frequently pointed out. But the fact that this practice still continues, shows that not enough has yet been said. "Line upon line and precept upon precept," seems to be the only way in which truth can be fixed in the public mind. If those who pursue this course will watch their trees carefully, and observe the effects of their treatment for two or three years, I think they will be satisfied that it is not only useless, but highly injurious. When the trees are trimmed in March, April and May, as soon as the warm weather comes on, and the sap presses into and distend the sap vessels, and runs down and blackens and poisons the bark, and causes it to crack and separate from the underlying alburnum, and thus effectually prevent the healing of the wound, gangrene and death of a portion of the wood necessarily follow. Where several such wounds are made in a tree, its whole constitution will soon become impaired. It ceases to grow, and in a few years droops and dies.

Trees that are trimmed the least will generally be found to be the most vigorous, and to develope the best formed and most beautiful heads. Now and then, a limb that is putting

forth in an inconvenient direction, or in a direction which will injure the symmetry of the head should be taken away. A limb that is shooting out more vigorously than the rest, may be shortened, and when two limbs are chafing each other, one may be removed. Shoots that grow from the trunk, will generally die or cease to grow, when nature has no further service for them to perform. The idea of cutting out the whole central portion of an apple tree, to let in the sun, is wholly erroneous. The tree is thus deprived of a large portion of its lungs, as well as of many of its best bearing branches. In our climate the fruit so far from requiring the direct rays of the scorching sun in midsummer, requires to be protected from its rays by the foliage which nature has provided. The directions given in English books for the cultivation of fruit, are adapted to the moist and cloudy atmosphere of England. The attempt to apply them to the cultivation of fruit in our climate, has led to the adoption of much erroneous practice.

The best time for general pruning is a mooted question among intelligent men. But my own belief is that the proper time, in this climate at least, is in June and July, when the leaves have attained their full size, and are in full health and vigor, and are elaborating an abundance of sap. In this state, a fresh wound will commence healing at once. New bark is rapidly formed to cover the wound. It is the descending sap from which the new bark as well as all the other tissues of the tree is formed. When this sap, properly elaborated in the leaves, is not furnished in the formative vessels, no new growth of any kind is effected Hence it is only when the leaves are in a condition to perform their proper office, that the new growth necessary to effect the healing of a wound can be accomplished. J. R.—*New England Farmer.*

Trial of Mowers in Massachusetts.

Letter from Thomas Mottley, jr., on behalf of a committee of the Massachusetts Society for Promoting Agriculture, informing the Executive Committee that the Massachussets Society had offered a premium of $600 for the best Mower. "The possesser of the Mowing Machine which shall cut, during the present season, with the greatest economy and to the best advantage, not less than fifty acres of grass, within the State, the Machine to be worked by horse or ox power, shall be entitled to the sum of $600" all other things being equal. The Board also announces a premium of $1,000 to the maker and exhibitor of the best Mowing Machine in 1856. A general trial of the competing Machines will be had—of which due notice, with the terms of trial, will be given.

Keep Fruit Trees Straight.

Trees in an open exposure often acquire a leaning position from the prevailing winds. This should not be suffered beyond a certain stage of the tree. When as large as one's wrist they should be set up erect, and, indeed, thrown into the wind at an angle of ten or fifteen degrees; in order to bring them ultimately into a straight position. This is best done by obtaining crotched limbs from the woods, eight to twelve feet long, and placing the butt end, which should be sharpened, on the ground, and the crotch end either against the trunk, immediately beneath the branching point, or against a large outer limb, if more convenient, securing it from chafing in the crotch, by a padding of straw, or litter, and setting the tree up at once to the desired angle of elevation. Loosen, also, the ground on the windward side of the root so that it will not bind, and the work is accomplished. Let this be done when the tree begins to make its summer growth, or soon after leafing out. One season, if the tree is thrifty, will be all that is required. If, however, it be obstinate repeat the trial another year. The remedy is sure. Even large trees, which have acquired a permanent lean, may be thrown into an erect posture, by loosening the earth at the root, and occasionally cutting off an obstinate large root, without injury to its growth, and thus be made sightly. An erect tree will be longer lived and more fruitful than a leaning one, and not half so subject to casualty as if left to its own guidance.—*Exchange.*

How Mr. Sparrowgrass Went Down Stairs.

One evening Mrs. S. had retired, and I was busy writing when it struck me a glass of ice water would be palatable. So I took a candle and pitcher and went down to the pump. Our pump is in the kitchen. A country pump, in the kitchen, is more convenient; but a well with buckets is certainly most picturesque. Unfortunately, our well water has not been sweet since it was cleaned out. First I had to open a bolted door that lets you into the basement hall, and then I went to the kitchen door which proved to be locked. Then I remembered that our girl always carried the key to bed with her, and slept with it under her pillow. Then I retraced my steps; bolted the basement door, and went up into the dining room. As is always the case, I found when I could not get any water I was thirstier than I supposed I was. Then I thought I would wake our girl up. Then I concluded not to do it. Then I thought of the well, but gave that up on account of its flavor. Then I opened the closet doors—there was no water there; and then I thought of the dumb waiter! The novelty of the idea made me smile; I took out two of the movable shelves, stood the pitcher on the bottom of the dumb waiter, got in myself with the lamp; let myself down, until I supposed I was within a foot of the floor below, and then let go!

We came down so suddenly, that I was shot out of the apparatus as if it had been a catapult; it broke the pitcher, extinguished the lamp, and landed me in the middle of the kitchen at midnight with no fire, and the air not much above the zero point. The truth is I had miscalculated the distance of the descent—instead of falling one foot I had fallen five. My first impulse was to ascend by the way I came down, but I found that impracticable. Then I tried the kitchen door, it was locked; I tried to force it open; it was made of two-inch stuff, and held its own. Then I hoisted the window, and there were the rigid iron bars. If I ever felt angry at anybody, it was at myself for putting up those bars to please Mrs. Sparrowgrass. I put them up, not to keep people in but to keep people out.

I laid my cheek against the ice-cold barriers and looked out at the sky; not a star was visible; it was as black as ink overhead. Then I thought of Baron Trenck and the prisoner of Chillon. Then I made a noise! I shouted until I was hoarse, and ruined our preserving kettle with the poker. That brought our dogs out in full bark, and between us we made night hideous. Then I thought I heard a voice, and listened—it was Mrs. Sparrowgrass calling to me from the top of the staircase. I tried to make her hear me, but the dogs united with howl, and growl and bark, so as to drown my voice which is naturally plaintive and tender. Besides there were two bolted doors and double deafened floors between us; how could she recognize my voice even if she did hear it? Mrs. Sparrowgrass called once or twice, and then got frightened; the next thing I heard was a sound as if the roof had fallen in, by which I understood that Mrs. Sparrowgrass was springing the rattle. That called out our neighbor, already wide awake. He came to the rescue with a bull-terrier, a Newfoundland pup, a lantern and a revolver. The moment he saw me at the window, he shot at me, but fortunately just missed me. I threw myself under the kitchen

table and began to expostulate with him, but he would not listen to reason. In the excitement I had forgotten his name, and that made matters worse. It was not until he had roused up everybody around, broken in the basement door with an axe, gotten into the kitchen with his savage dogs and shooting iron, and seized me by the collar, that he recognized me—and then wanted me to explain it! But what kind of an explanation could I make to him? I told him he would have to wait until my mind was composed, and then I would let him understand the whole matter fully. But he never would have had the particulars from me, for I do not approve of neighbors that shoot at you, break in your door, and treat you in your own house, as if you were a jail bird. He knows all about it, however—somebody has told him; *somebody* tells everybody everything in our village.—*Putnam for June.*

Spirits of Turpentine for Black Knot.

Mr. A. E. Porter, in a communication by him in the New England Farmer, recommends the application of spirits of turpentine as a remedy for the black knot in plum trees. He says that a friend of his used it in the following manner. He was at work in his garden and about to cut down a plum tree that was half covered with black knot. "Having" said he, "some spirits of turpentine on hand, he bethought himself to make an experiment on this tree before destroying it. He cut the knots with a sharp knife down to the wood, and made a thorough application of turpentine .Months passed the tree lived, did well, and the black knot was destroyed. Since then he has been very successful with this remedy, and so have others who have followed his example."

Setting Hens.

In setting hens, thirteen eggs are enough to give them; a large hen might cover more, but a few stronger, well-hatched chicks are better than a large brood of weaklings that have been delayed in the shell perhaps twelve hours over the time from insufficient warmth. At the end of a week, it is usual, with setting turkeys, to add two or three fowl's eggs, "to teach the young turkeys to pick." The plan is not a bad one; the activity of the chickens stirs up some emulation in their larger bretheren. The eggs take up but little room in the nest, and will produce two or three very fine fowls.—*Albany Cultivator.*

Cheese Making.

A few months ago I visited a lady friend in the country; her table was continually supplied with most delicious cheese of her own making. I asked, as a particular favor, that she would communicate to me her peculiar method of making it, and wherein she differed from others. She replied that she followed the method she had been taught generally, prepared the rennet in the same way, but felt sure she had discovered the reason why cheeses were strong both to the taste and smell, which consists in the single circumstance of putting the curd to press *warm.* She did not use any artificial means to cool the curd, but after it had been chopped and scalded, allowed it to remain spread upon the cloth until it was cool as the surrounding atmosphere, and thus put it to press.

There is a great deal of probability in the above statement, for I have frequently noticed that some cheeses from the same dairy would be strong and offensive, and others mild and agreeable, which may be owing to the circumstance of the dairy-woman getting her cheese to press early some days, and being hindered others until the curd had time to cool. It may be well for dairy-women to try the experiment so as to ascertain the fact.—*N. E. Farmer.*

Delaware County Society.

The second annual Exhibition of the Delaware county Agricultural Society, will be held at Media, on Thursday, Friday and Saturday, the 6th, 7th, and 8th of September next. A large and liberal premium list is offered, calculated to call forth the Agricultural and Horticultural, as well as manufacturing skill of the county. The exhibition of this Society last year was one of the best we ever attended; and there is every reason to presume, the coming one will be equally successful, if not more so. We are gratified to find the Penn. Farm Journal occupies considerable space in the premium list.

Southdown Sheep.

We copy the following on the value of the Southdown breed of sheep, from Lewis G. Morris' illustrated catalogue. Those who have owned and reared Southdowns, will subscribe to all he says in their favor. It strikes us, however, he has underated the weight of their fleece.

Will our friends Cope or Worth, who have long owned such fine flock's of them, give us an account for our next issue, of the weight of some of their fleeces?

"The wool of the Southdown Sheep weighs, when washed about 3 lbs. the fleece; but in some of the more highly-fed flocks of the lower countries,its weight is now 4lbs. or more.

I will now continue an account as to their relative value as a wool-producing sheep, as contrasted with other breeds in this country, and for which information I am indebted to my friend Mr. Jonathan Stott, of Columbia County, N. Y., who is well known as a gentleman of high standing, and for many years a successful manufacturer of woolen goods. On the 19th Dec. last, Mr. Stott paid me a visit, and examined the wool on the back of my sheep, and also in the fleece (as I had my last year's clip on hand). He prefaced his remarks by stating that the Southdown produced the proper wool for medium fabrics, which yield more profit to the manufacturer, always creates a more ready demand at its rated value than either *finer* or *coarser* goods; and stated that the average value of wool for the last five years, as taken from flocks in our *Western States,* called fine wooled, which yield 2½ lbs. per head, and worth 44 cents per lb. He rated the quality of my Southdown wool as worth within 10 cents per lb. of the fine wool, or 34 cents. and that the finest Saxony wool of a *few* choice flocks in Pennsylvania, &c., have been worth for the same number of years, average of 60 cents per lb., and would yield about 2 lbs. per head. My flock of Southdowns, numbering about 100 all told, will average 5 lbs. Say a large flock of the same would yield

	4 lbs	per head	at 34c.	$1.36
Saxony Fleece would yield	2	"	"	60c.	1.20
The ordinary called *fine wool*	2½	"	"	44c.	1.10

This calculation gives the Southdown 16 cents per head more than the Saxony, and 26 more than the ordinary fine wooled.

It is beyond a doubt correct, but for more certainty, I will reduce the value of the Southdown per head in money calculation, and take the ground that they will produce the same amount of wool money per head. The above statements as to weight are based upon the wool being well washed on the back of the sheep, and put up in good saleable order. In answer to the question as to how much dirt there can be in wool that would pass for merchantable, he said that if I wanted to get at the real weight of wool, to take a fleece and wash it as clean as could be with warm water, and after it was perfectly dry, add 15 per cent. to its weight, or in other words, he thought merchantable wool possessed 15 per cent of dirt.

In answer to my inquiry as to the French Merino, or

Rambouillet, he replied he was without experience as a manufacturer, as from what he had examined on the back of the sheep, and from the amount of dirt and grease which always appeared connected with or added to them, he had never the least desire to purchase their wool, neither does he like to manufacture the old fashioned Merino wool, on account of the natural grease it contains. This calculation is based upon flocks ordinarily cared for in large numbers; of course where small flocks are well kept and well cared for, the average weight of wool will be greatly increased. My calculations and statements are made for those who may wish to embark in sheep farming on a large scale.

Having fixed the value of the wool certainly equal per head, let us now proceed to the value of the carcase. As to the quality of mutton, contrasted with other sheep, it is a fact as well established that Southdown mutton is as far superior to any other in this *country*, as a canvass back duck is to all others of its kind. In the Highlands of Scotland and in Wales there is a little mountain breed of sheep that equal if not surpass the Southdowns in quality of mutton, but it is mainly owing to the herbage upon which they feed. I was so struck with the quality of that mutton in 1850, while in the Highlands near the Trossacks, that I determined to purchase some of the sheep and forward them to Liverpool to be shipped with a lot of animals I sent home that year. I was recommended to a Mr. MacGregor as the best person to get them from; after quite a toilsome journey, and making my wishes known, MacGregor said he would let me have them with pleasure, and the main outlay would be the expense of getting them to Liverpool, as the sheep themselves were of but little value; and upon informing him that I wanted them for mutton sheep in America upon cultivated farms, where they would be cared for as domestic animals should be, he said,—"You had better take the Southdowns, for they posses all the advantage as to mutton when fed on the same food, and will produce a great deal more of it." This wound up my desire for the Black-faced Heath Sheep, and rather increased my appetite for the mutton in its native location.

The value of Southdown mutton is regularly established by a certain additional price per pound in all the markets in England, and in all cases the sheep's head and legs are left on to satisfy the purchaser. The average size and weight of Southdowns in large flocks would be greater than either of the kinds with which I contrasted the value of their wool, and their hardy constitutions, and being very prolific, often producing twins, uncommonly good milkers and kind nurses all tend to make them in my judgement the most valuable sheep to propagate in the United States. The long-wooled, such as the Bakewell, Leicester and Cotswold, I have not taken in this calculation, as the quality of wool and mutton vary so much from the Southdown that a comparison could not well be made, and they are not sheep calculated for keeping in large flocks.

The result of sheep husbandry in England has driven the fine wooled sheep nearly, if not entirely out of the country, and as it is the closest calculating agricultural country for profit, it is fair to assume that my conclusions are correct. At the present day, when meat bears so high a price as contrasted with wool, there is no question as to the superiority of the Southdowns.

Horses.

The very worst recommendation a breeding horse can possibly have, is, that he possesses great height. If the horse had been made like the "Crane, for wading in search of food, or could be made useful to man for hunting ducks, or as a fruit ladder, then it might be well to breed a few for these objects. But, inasmuch as, for all the uses to which we put the animal, long legs, are a serious disadvantage, rendering him liable to cripple up, at an early age, (who ever saw a "leggy" horse, fit for the road at fifteen or twenty,) and being invariably coupled with other serious imperfections, it is of the utmost importance, that we steer clear of all animals for breeding purposes, both male and female, that show too much "daylight. The proper horse for the farmer is one of enduring constitution, round in the body and thick set, quick, but not fiery good sized joints, but not large boned, broad in the hips, deep in the quarter, strong in the loins, capacious in the chest, low upon the legs and having a good hoof. Such a horse will be hardy, strong, and a good traveller, and always up to *the collar and the feed box.—Ohio Farmer.*

Agricultural Branch of the Patent Office.

Sheep Raising in Spain—Mode of giving Salt to the Sheep:—The first thing the shepherd does when his flock returns from the South to their summer downs or pastures, is to give them as much salt as they will eat. Every owner allows to each tribe of a thousand sheep twenty-five quintals of salt. (2,500 pounds,) which they consume in about five months. They eat none in their journeys, nor are they allowed any in winter, for it is a prevailing opinion that it produces abortion when given to ewes forward with young. This has ever been the custom, and is thought to be the true reason why the kings of Spain could never raise the price of salt to the height it has maintained in most parts of France: for it would tempt the shepherd to stint the sheep, which it is believed, would weaken their constitutions and deteriorate their wool. The shepherd places fifty or sixty flat stones at the distance of five paces apart, strews salt upon each, leads the sheep among them, and every one is allowed to eat of it at pleasure. But when they are feeding on limestone land, whether it be on the grass of the downs, or on the little plants of the cornfields after harvest home, they eat no salt; and if they meet with a spot of mixed formation, they are said to partake of it in proportion as the soil is mingled with clay. The shepherd, being aware that his sheep will suffer if deprived of salt, leads them to a clayey soil, and in a quarter of an hour 's feeding they march to the stone and devour whatever they need.

Caution in Allowing the Sheep to Imbibe Frost or Snow:—One of the shepherd's chief cares is not to suffer his sheep to imbibe, in the morning, the frozen dew or melted frost, and never to approach a pond or stream after a shower of hail; for, if they should eat the dewy grass, or drink the melted hail, the whole tribe it is believed, would become depressed in spirits, lose their appetites, pine away and die, as often has happened. Hail water is also so pernicious to man, in that climate, that people have learned by experience, not to drink from a rivulet or stream until some time after a violent storm of hail,

The Shepherds:—The salary of the chief shepherd does not exceed two hundred dollars a year and a horse; that of the first under shepherd of a tribe, ten dollars a year; the second, seven dollars; the third, five; the fourth three; and the fifth a boy, two dollars a year. The ration of each is two pounds of bread a day, with the privilege of keeping a few goats in the flock for their milk. They are also entitled to the skins and carcasses of the culled sheep and lambs, and each receives from the chief shepherd a "regalito" of three fourths of a dollar in April and October, and these are all the sweets that these poor wretches enjoy, with the exception of about a month in a year, which each takes in his turn, to visit his family and friends. They are exposed the rest of the time to all the vicissitudes of the weather, and at night have to lie in miserable huts formed of stakes, brambles, or branches of trees, and often sleep as they term it, *de abaxo*

las setrellas,—under the stars.

SMEARING THE SHEEP:—Towards the close of September, the shepherd performs the operation of smearing the sheep with a heavy, irony earth; common in Spain. It is first mixed with water, and then daubed on their backs, from the neck to the rump. Some say it mingles with the oil of the wool, and thus becomes a varnish impenetrable to the cold and rain, others, that its weight keeps the wool down, and prevents it from growing long and coarse; and a third class, that it acts as an absorbent, and receives a part of the perspiration, which would otherwise foul the wool and render it rough. Be this as it may, it is a custom of long standing, and probably it is useful both to the fleece and to the animal which carries it, and answers the purpose of destroying vermin.

Vandalism.

"One night last week, ten fine Durham cattle belonging to Col. Morris, of Morrisania, N. Y., were abstracted from his premises and driven away. Some clue was obtained which led to the discovery of the carcasses of cattle dressed and exposed for sale in one of the New York markets. The hides were found in Newark, New Jersey, whither the rogues had taken the precaution to send them. Six of a gang, of which it was ascertained there were ten in all were arrested, and the Colonel has them now safely lodged in jail in Westchester county, as he dared not trust to New York city justice, for their safe keeping and trial."

In view of the animals stolen being part of Col. Morris' imported stock for breeding purposes, the indignation that every one must feel at such vandalism no one will be found fully *able to express!*—but will they take time to hit upon a proper degree of punishment for infliction upon the—we want terms in which to express our detestation! Our first proposal is, for the State in which the offence was committed to construct an iron cage with as many cells as there are criminals, place it upon wheels, and attach to it a pair of the finest horses in the country, and give it into the care of some very respectable person to attend it; and set it to travel the country, as a collection of "wild beasts of the most ferocious order," for exhibition at 12 1-2 cts. per head, *women and children at half price,* and keep them going, until the value of the animals and 50 per cent. above, shall have been paid to the owners, after which the wretches may be relieved, by the infliction of confinement for life!—A first thought, that might be improved upon, a friend just come into the office proposing, that after the expenses of ownership and travel have been defrayed, that they be given to the jailor as his perquisite, to be continued on exhibition, and be liable to be stirred up with a long pole," as often as customers shall drop in to examine them; at the same time, that a certain portion of the receipts shall go to the support of their wives and families—Is it possible that such wretches can have either?—after a regular bill of divorcement shall have been granted to their wives by the law-courts.—Eds.—*Boston Cultivator.*

Pea Weevils.

Few persons, (says Dr. Harris,) while indulging in early green peas, are aware how many of these insects they swallow. When the pods are examined, small discolored spots may be seen within them, each corresponding with a similar spot on the opposite pea. On this spot a minute whitish grub, without feet, will be found therein; it is the weevil in its larva form; it lives upon the marrow of the pea, and arrives at its full size by the time the time the pea is dry. This larva then bores a large hole, from the hollow in the centre of the pea, quite to the hull, but leaves the germ of the future sprout untouched. This insect is limited to a certain period for disposing its eggs. Late sown peas escape its attacks. Those sown after the 10th of June, are generally safe.

When the peas are green the Baltimore Oriole splits open the green pods, for the sake of the grubs contained in the peas, thereby greatly contributing to the decrease of these noxious insects. The instinct that enables this beautiful bird to detect the lurking grub, concealed as it is within the pod and hull of the pea, is worthy of admiration.—*Harris' Insects, &c.*

Destruction of Ants.

A correspondent of the Philadelphia Ledger says:—We give you a sure remedy—procure a large sponge wash it well, press it very dry; by so doing it will leave the small cells open—lay it on the shelf where they are most troublesome, sprinkle some fine white sugar on the sponge (lightly over it) two or three times a day, take a bucket of hot water to where the sponge is, carefully drop the sponge in the scalding water, and you will slay them by the thousand, and soon rid the house of these troublesome insects. When you squeeze the sponge, you will be astonished at the number that had gone in the cells.

Culture of Lucerne.

We have been informed by Mr. Lewis Mabry of this city, that he has cultivated lucerne regularly for more than forty years with the most satisfactory success. It has invariably supplied him with the greatest abundance of green food of the richest quality for soiling cows, and it makes a hay in all respects equal to clover. There are plants now in Mr. Mabry's yard which have been there for forty years. He has usually had about two acres of ground in lucerne and his mode of cultivation is as follows:—The land should be well and deeply prepared, as the plants send down their tap roots to a great depth.

The soil should be dry and rich. The time for sowing the seed is in September, and they should be sown broadcast. They soon vegetate, and the plants continue to grow vigorously during the fall, and acquire sufficient strength to withstand the severity of the coldest winters. In the spring, they start off to grow in advance of all other vegetation, and take entire possession of the ground. If the seed is sowed in the spring, the grass will overtop and smother the lucerne, unless it is drilled, in which case it requires frequent and careful workings. It should not be sowed with any other crop. When sowed in the fall, it will furnish two cuttings the next season. The second season it will be fully established, and yield as many as four cuttings, which it will continue to do for four years. By the expiration of that period it will begin to die out in patches, and another sowing should be made. The plants should not be suffered to bear seed any further than is necessary for new growings.

On the whole, Mr. Mabry considers lucerne as invaluable particularly on small farms, from the great quantity of food it supplies: thus enabling the possessor of only a few acres to keep a number of cows, which, in their turn, furnish abundant means of enriching the land, besides affording the owner the luxury and profits to be derived from a good dairy. We would especially recommend to our farmers in the neighborhood of the city to make the experiment. With milk at a sixpence a quart, and butter at 50 cents—never less than 37½ cents a pound, the advantages to be derived from a dairy appear to us to be very decided.

Mr. Mabry informs us that the *Alfalfa* clover, about which we made some inquiry a few weeks ago, is nothing else than lucerne.—*Southern Farmer.*

A Word to the Boys.

I wish to say a word to the boys of the good old Keystone State, through your valuable Journal, if you have any readers that will come under the name of boys. I see in a late paper that boys are getting very scarce and the Yankees are about contriving a machine to remedy the evil, as young America boys think they are men before they have seen fourteen summers. It is to these I wish to speak at least the farming portion of them.

As harvest is coming on it is customary among the farmers to rig a scythe for every thing that is able to carry one. Now boys I would say to you to claim a good tool, not particular about a new one, although they look dazzling to the eye they are not alwas the best, (all is not gold that glitters). A well tried tool if not too much worn, is much better for you. But let them be light and well fastened, for when a thing has to be tinkered at in the field, you are bound to do but little good. Do not pull and sweat in trying to make a hand as most boys do, but what you attempt to do, do well. Mow clean and level, have the pointing in and out as low as the middle of your swath. If you are with men, listen not to their flattering words, as very few like to mow, and they will try to get you to do as much as they can, thus exhausting your strength, and racking your frame, while you are too young for the task.

Be not over anxious to persuade your fathers to let you mow or cradle as they have experienced it before you, and can better judge of your ability to perform such work. If parents do justice to their children they would not encourage them to begin too young, for by the time you are in reality men you will be complaining of pains and Rheumatism &c., and your life will be a trouble.

Preserve a healthy constitution by moderate labor, and never let idleness creep in upon your mortal borders. But push onward in the field of action, for the time is coming when prominent Agriculturists will be called the great men, as the Generals are called great now. Yes! the swords will be beaten into Mowing Machines, and the spears into Reapers and we will have war no more. A word to the wise is sufficient

ONE OF THE BOHOYS.

July, 16th, 1855.

Founder in Horses.

I send you a recipe for founder in horses, which I have never seen in print. I have used and recommended it for fifteen years, and so far as my experience goes, it is a *sure and speedy remedy.* Take a table-spoonful of pulverized alum, pull the horse's tongue out of his mouth as far as possible and throw the alum down his throat; let go of his tongue and hold up his head until he swallows; in 6 hours time (no matter how bad the founder) he will be fit for moderate service. I have seen this remedy tested so often with perfect success, that I would not make five dollars difference in a horse foundered, (if done recently,) and one that was not.—E. L. PERHAM.—*Country Gentlnman.*—Albany, Oregon, Ter.

Agricultural Division of the Patent Office.

Plant lice on Grape Vines:—We make an extract from a paper by Mr. Townsend Glover on the plant louse, to be published in the forthcoming agricultural report:—The plant louse (*Aphis*) is very destructive to young shoots and leaves of grape vines, as they suck out the sap by means of a piercer or trunk, and thus enfeeble the system of the plant, the natural history of these insects is similar to that of the cotton louse. Their natural enemies are also the same, as they are destroyed by the lady bird, the lace-wing fly, and syrphus. I must, however, remark that the minute ichneumon fly which destroys the aphis or grape vines, differs essentially from that of the cotton louse, although its general form and habits are the same.

"When the vines are in small gardens the best remedy to destroy this pest would be to syringe the plants thoroughly, both on the upper and lower sides of the foliage, with a solution of whale oil soap. Dusting the leaves with lime has also been recommended, and in a green house these lice can be destroyed by a thorough fumigation with the smoke of tobacco.

APPLE TREE BORER.

We copy the following from the Maine Farmer, as applicable to the season. Now is the time to ferret out the borer, and save ones trees. In addition to the recommendation below, our friend J. S. Keller, of Orwigsburg, recommends in the last vol. of the Journal, as a preventitive, where trees have not been attacked, procure a square box, one and a half or two feet high, sufficiently wide to last for several years, to reach at least one inch or more into the ground, around the trunk of each tree, the box to be closed at the top with fine grass &c., covered with a coat of lime mortar, and the tree whitewashed up to the first limbs.

The box may be opened, and left open till April or May, for air and moisture if necessary. A writer in the Ohio Farmer, also says the attacks of the borer, may be prevented, 1. by trying only sound trees. 2. After setting them out apply to the trunk and lower branches with an old broom, the following. To two quarts of soft soap add half a pound of sulphnr, and dilute the mass until it is as thin as paint by pouring in strong tobacco water. Make one application to the trunk and lower branches, the middle of May, and another the middle of June. 3. Before the weather becomes very hot, protect the trees from the sun by a board, or wrapping wisp of straw around the portions most exposed to the heat. 4. Place a circle of ashes close around the root of the tree.

"The only sure way to kill the borer when he has got in and began to work, (which may be known by seeing its *saw dust* at the root of the tree,) is to find the hole where he pushes out his *shavings*, and cut him out and *chop his head off.* By pushing a limber wire up you may sometimes pierce him, and kill him, but are not always sure of reaching him. The time of the operation of this pest, is from June to August.

The preventitives recommended, are washing the tree with potash water, soap suds, white-washing, &c., &c.

The grass and sprouts and other incumbrances should be cleared away from the trunk of the tree at its base, so that there should be no hiding place for the winged insects to lodge in during the day. This species generally deposits its eggs near the ground; but there is another variety that attacks the limbs. We once had a young tree killed by this variety. The worm appeared smaller and flatter than the one above described. Its parent we have never seen.

One of the most insidious and at the same time destructive enemies to the apple tree in Maine is the borer, (*Saperda Bivittati*, of naturalists. This is an insect of the beetle, or as we Yankees say of the "*bug*" kind, which is represented in the accompanying cut. In the perfect or winged state, as you here see him, he is about an inch long, of a lightish brown color with two white stripes running lengthwise of his back. He has a white face and whiteish feet, and two long horns, or antennæ. He is an active, stirring fellow in the night, and has his mouth armed with a pair of sharp, horny mandibles, with which he can cut through substances quite hard.

We once imprisoned one in a tumbler, over which we tied several thickness of thick, strong paper. He kept the peace during the day, but in the night he cut a hole in the paper, and *"vamosed"* before morning. He generally lies quietly during the day, and performs what he has to do during the darkness. The perfect or winged insect does no other injury, that we know of, except depositing its eggs in the bark of the apple tree. It is the worm or maggot, which does the mischief, by boring into the tree, and cutting off, as it burrows along under the bark, the communication or channels of sap between the top and roots.

Newly Invented Horse Shoe.

A patent has recently been granted to a mechanic of Philadelphia, for an improvement in the method of fastening horse-shoes. The invention consists in the construction of inclined flanges or lips, rising from the front sides of the shoe corresponding in form with the parts of the hoof against which they are made to bear, when fitted. One of the side flanges is made separate, and fastened by sliding into a recess in the side of the shoe, and secured by means of a screw, thus entirely dispensing with the use of nails, and avoiding any liability to injury by pricking.

Colza Oil.

This beautiful oil, which is used in all the French lighthouses, and which is superior to sperm for such purposes, should arrest the attention of our oil dealers and farmers. The plants from which it is obtained, we have no doubt, can be cultivated with success in various parts of our country, and if this can be done it should be attended to.—*Scientific American.*

Roots of Trees in Pipe Drains.

Where drains have to be laid near the roots of trees, it is important that they should be well bedded in cement, at those places, and every small opening effectually closed. Whenever the water can get in the roots also will find their way, and eventually cause much trouble in the stoppage of the drain.

The Albany (N. Y.) Knickerbocker says:—" A first class Shanghai cock will eat as much corn as a horse. In consequence of this, it is not profitable to grow Shanghais, unless you can buy oats for ten cents a bushel, or sell eggs for four shillings apiece.

How to Make a Horse Carry his Tail Straight.

I had a very fine colt, that carried his tail on one side, and was continually throwing it over the driving line, when to cure him of this habit, I braided a loop in his tail and tied it with a string to the trace on the same side on which he carried it, and when he found it was tied he would pull on it, when I would let him up a little gradually on the string until at length he came to carry his tail perfectly straight.—*Boston Cultivator.*

We see it stated that the Executive Committee of the Virginia State Agricultural Society, have determined this year to place the entire management and arrangement of the departments of "Household and Domestic Manufactures," Flowers," and "Ladies Ornamental and Fancy Works" in the hands of the ladies.

Mammoth Calf.

A cow belonging to William Creamer, near Bareville, Lancaster county, recently gave birth to a calf, weighing 125 lbs. It was well formed in every respect and healthy. The breed is not stated.

Orchard Grass.

TO THE EDITOR OF THE FARM JOURNAL:—As a great deal of Orchard grass seed is sown and sent from the districts around Philadelphia, can you give us the best mode of *cleaning* the seed. It being so light, presents a difficulty which is not found in preparing Timothy and other heavier seeds for market. Orchard grass is a good deal cultivated in this neighborhood, in connection with clover, principally for grazing purposes. The first crop is usually cut for hay, and we must continue to grow it 'till a better substitute is found. The various Rye grasses do not appear to succeed so well in our climate, though they are greatly esteemed in England. The Italian Rye grass is more valued than the Perennial, and the seed commands a higher price. "Pacey's" appears to be more highly appreciated than any variety of this family. By some late experiments, it is observed that the Italian Rye grass (Lolium perenne) sown with Alsike clover (Trifolium hybridum) is said to yield for hay and pasture the best crop as to quality and bulk of product. It is sown either with or without grain. Which do you consider best in sowing grass seeds (particularly Timothy,) with grain, or alone? SUBSCRIBER.

May 7th, 1855.

An Inquiry.

MR. DARLINGTON:—Will some of your numerous readers inform a young farmer of the utility of Lime Spreaders, Cooper's or others. I have about twenty thousand bushels of lime burnt, and as the ordinary way of spreading it with shovels is very tedious, and withal not very pleasant work, and seeing an advertisement in the "Farm Journal" of a Lime Spreader, Lewis Cooper's, which proposes to do the work of six men and to spread the lime more evenly, I was induced to make this inquiry. Any information in regard to their practicability, the number of bushels one hand can spread with them in a day, and anything else pertaining to them will be thankfully received by

Uniontown, May, 8th, 1855. A YOUNG FARMER.

Sowing Corn Fodder.

MR. J. L. DARLINGTON:—DEAR SIR:—Your correspondent, George Walker, in March No., says, by the use of a corn-stalk cutter which he used last winter in cutting corn fodder, he saved at least twenty tons of hay, in consequence of which he was enabled to keep fifty-six head of horned cattle and five horses, being twice the number he was able to keep under the old and wasteful mode of feeding corn stalks without first being cut with a good machine. This we think is a misrepresentation of the subject; we do not doubt that the cutting of the corn fodder is a great saving to hay, but we have from good authority, that thirty or upwards of those cows, he did not have until after Christmas (the last of December), and he has bought ten tons of hay and fed it out, and if he keeps them until grass grows he will have to buy more than ten tons. Such stories as this are not creditable in this part of the state, I know not what they may be in Philadelphia. Yours,

FARMER OF SUSQUEHANNA CO.

Bridgewater, April 1st, 1855.

PENNSYLVANIA FARM JOURNAL.

VOLUME 5. PHILADELPHIA, AUGUST, 1855. NUMBER 8.

Exhibition of the State Society at Harrisburg on the 25th, 26th, 27th and 28th of September.

Now that the labors of the harvest are over, we hope our farmers in all sections of the State will be turning their attention to the approaching State Exhibition, and making arrangements to throw in their contributions. The Pennsylvania State Society is in a more prosperous condition than that of any other State Society. All its exhibitions have been most successful, and largely attended. As a matter of State pride, no less than individual duty, every farmer should lend a helping hand to sustain its well earned reputation, and extend its usefulness. Every thing has been done this season by the Secretary and Executive Committee in respect to convenient arrangements and accommodations, which they could think of, or which past experience has suggested. The Pennsylvania Railroad Company have agreed to issue excursion tickets at half price, which shall be good for the *whole week*, and to transport all contributions of stock, implements, or productions, free of cost, and the same arrangement has been made with the Catawissa, Sunbury and Erie, and other railroads. These latter roads will open to the exhibition a new section heretofore very much kept out by difficulties of access. The grounds selected at Harrisburg are most ample, and but a few yards from the depot, where the contributions are landed. A running stream passes through the grounds, affording abundance of water for stock, while a strong spring will be introduced by pipes for drinking purposes, yielding an abundant supply. Hay will also be supplied as usual free of cost, and grain at cost prices. The Secretary, R. C. Walker, informs us also that all the public houses in Harrisburg have agreed not to raise their ordinary prices during the fair. The address is to be delivered by Judge Watts on Friday at one o'clock It is also proposed to occupy three, at least, of the evenings during the week by public lectures or addresses on some department of agriculture, further notice of which, with the names of the speakers, will be given hereafter. At the last exhibition at Harrisburg, there were gentlemen from a distance willing to lecture, but suitable rooms were pre-engaged by the infant drummer, and other humbugs of the same stripe. On this occasion the hall of the House of Representatives will be obtained, which is sufficient to accommodate the largest audience

Since our last exhibition at Powelton, a considerable number of the best stock in the country has been introduced into Pennsylvania from distant sections, several of which have been noticed in the Farm Journal. There will be a general anxiety to see these high bred animals, and we hope our friends who have gone to great expense in their purchase, will forward them to the exhibition at Harrisburg. No equal opportunity occurs in the whole year for bringing fine stock into public notice.

In the implement department of agricultural machinery, many new and valuable implements have also been introduced since last season, and some then well thought of have been greatly improved, or superseded by others found more *efficient* on trial. Specimens of all the improved reaping and mowing machines will be brought there, as well as other implements in great variety. Steam power will be on the ground for use of exhibitors where required.

In respect to products of the soil,—superior wheat, corn, oats, potatoes, fruits, vegetables, &c.—there has not been a season for many years in Pennsylvania of such extraordinary abundance, and affording such material for a superior display.

On the whole we look for the approaching exhibition at Harrisburg to be the best yet held in the State. We would encourage our young farmers especially to be sure to attend, believing they will carry away with them in new ideas fifty per cent. more than the time and expense of going.

The Farmers' High School.

The Board of Trustees of the "Farmers' High School of Pennsylvania," met in Harrisburg, on Tuesday July 17, 1855, pursuant to adjournment. Members present Messrs. James Gowen, Frederick Watts, Wm. Jessup, A. L. Elwyn, James Miles, H. N. M'Allister, John Strohm, A. O. Hiester and Robert C. Walker:

On motion of John Strohm, FREDERICK WATTS was called to the chair.

The committee appointed at the last meeting to view the several farms proposed to be donated to the Farmers' High School, made the following report, which was adopted:

To the Board of Trustees of the Farmers' High School of Pennsylvania.—Your committee to whom was assigned the duty of making an examination of the several points proposed for the location of "The Farmers' High School of Pennsylvania," report that they have been engaged for the last ten days in making such an examination as will enable them to put the Board in possession of the

facts in relation to the subject. The first place visited was Centre county, where Gen. James Irwin proposes to donate to the Institution either of three farms of two hundred acres each, which lie contiguous to each other, at the junction of Penn's and Nittany vallies, with the pre-emption right to two hundred acres more, adjoining either, at any time within five years. The land is worth now, sixty dollars an acre. This additional quantity, Gen. Irvin proposes to lease to the Institution until the expiration of the five years, at a reasonable rent. This point is situated about the centre of the united vallies, about twenty miles north of the Pennsylvania Railroad, at the mouth of Spruce Creek, and eight miles south of Bellefonte. The land is a fine quality of limestone, sufficiently rolling in its surface, all cleared and fenced but about thirty acres on each farm: there is no stream of water upon the surface of either, but water is easily obtained by digging. The land is comparatively new, having been all cleared within a few years, and the grain now growing upon it shows the great fertility of the soil.

The next point we visited was in Erie county, where Judge Miles proposes to give to the Institution two hundred acres of land, which is situated about eighteen miles west of the city of Erie, and lies above the mouth of Elk Creek, between the railroad which bounds it on the south, and the lake shore. This land is in its character a sandy loam, highly fertile, with about one hundred acres cleared and cultivated, and the residue in heavy timber, of oak, hickory, chestnut, ash and hemlock;—this point, in the situation, is commanding and beautiful. Judge Miles will also give a pre-emption right to any additional quantity of land which may be desired, at sixty dollars an acre.

Your committee next viewed the estate of Geo. A. Bayard, Esq., of Allegheny county, situated on the Youghageny River, about three miles from its mouth, and eighteen miles from the city of Pittsburg. This estate consists of six hundred acres of free stone land, worth at present prices thirty five dollars an acre. There has been a very large expenditure upon this estate, in the erection of buildings, fences and other improvements, which are made of the most substantial and durable materials. A large brick mansion has just been erected, and is yet unfinished;—there are two large barns and many dwelling houses on the property, all of which are built of cut stone;—running water is abundant, and the whole property lies in a bend of the Youghageny River, which is navigated by steamboats at all seasons of the year. Mr. Bayard proposes to sell this property to the Institution, at such a price, and upon such terms, as to time of payment, as would make the purchase desirable and profitable.

We were then invited to view the estate of Col. Elias Baker, situate on the Pennsylvania Railroad, about two miles south west of Altoona, in Blair county. Col. Baker offers gratuitously two hundred acres of land, all of which is cleared and fenced, except about forty acres, and lies on both sides of the railroad;—that on the south side, about sixty acres, is of a very good quality of freestone land, and that on the north, is a good quality of slate land. There are upwards of two hundred acres more in the tract which may be purchased at twenty-five dollars an acre. This land is finely watered. Mill Creek passing through it, and over-head water can be brought to any buildings which might be erected upon the premises from a large and unfailing spring. These are the only points which have been examined by your committee, but since their return, they have received a communication informing them that Mr. H. Easton, of Franklin county, offers to donate for the purposes of "The Farmers' High School" two hundred acres of land, of the value of sixty dollars an acre, upon condition of its location there, or that he will contribute liberally, with others, to induce its location anywhere within the county of Franklin.

In the examination made by your committee, they were accompanied by several members of the Board, Messrs. Robert C. Walker, H. N. McAlister, Hon. Wm. Jessup, and Hon. A. O. Heister, of whose opinion and counsel they had the advantage. It was a remark, common to all, that the feelings and interests of the people of Pennsylvania had never been awakened to the importance of this subject. Everywhere they went, and and every one they saw, seemed to increase the impression, that this, of all things else, is what Pennsylvania wants—a place where farmers may safely and cheaply educate their sons in the science and practice of agriculture.

There is not one point viewed by your committee which would not be eligible for the location of "The Farmers' High School." But so little has heretofore been known throughout the State of the movement now being made for its establishment, and the determined purpose of the Board of Trustees to act speedily, that it would be inexpedient and injudicious that your committee should, at this moment recommend the adoption of one site as more eligible than the others. One already offered, they have had no opportunity to see, and doubtless others will be presented possessing advantages to command the attention of the Board.

The point where the school shall be located is a matter of very great interest, and should not be hastily determined nor until greater publicity should be given to the fact that the Board are about to act definitely upon the subject. Which is respectfully submitted.

James Pollock,
A. L. Elwyn,
Fred'k Watts.

The committee then offered the following resolutions which were agreed to.

Resolved, That when this Board adjourns it be to meet again at this place on Wednesday, the 12th of September next, at 10 o'clock, A. M., and that the Board will then proceed to determine finally the point where the "Farmers' High School," shall be located.

Resolved, That the duties of the committee heretofore appointed to receive communications and examine proposed points of location be continued; and should any further propositions be made, that they report the same to the Board at its next meeting.

Whereas, The determination of the Board speedily to put the "Farmers' High School" into operation renders it necessary that a Principal to conduct its operations and teachings, and especially to aid in its organization, should be chosen; therefore,

Resolved, That Dr. A. L. Elwyn, John Strohm, and Wm. Jessup, be a committee whose duty it shall be to select a proper person for that purpose and that they make report to the next meeting of the Board.

P. S.—After the Board had taken action upon the foregoing report and resolutions, a gentleman of Dauphin county, a member of the Executive Committee of the State Agricultural Society, appeared before the Board, and said that at the next meeting, the citizens of Dauphin county, to induce the location of the School here, would offer to pay the sum of ten thousand dollars, and with a view to its attainment he would head the subscription with one thousand dollars. A delegation of Messrs. Geo. W. Patton and John Morrow from the county of Blair, on behalf of her citizens, proposed that they would purchase and pay for two hundred acres of land of Col. Baker, in addition to what he offers gratuitously. Thus presenting to the Board a grant of four hundred acres on condition of the location of the School there.

A communication was received from Joseph Baily, and referred to the committee having charge of the subject, inviting the Trustees to look at a large tract of land in Perry county he proposes to sell upon liberal terms to the Farmers' High School.

A communication was received from Algernon S. Roberts, stating that the imperative demands of public business prevented his attendance.

On motion of John Strohm, the proceedings of this meeting were ordered to be published, with the request that all papers in the State would copy the same. On motion the Board adjourned.

ROB'T. C. WALKER, Secretary.

Summer Pruning.

We copy below from Barry's Fruit Book some general principles in respect to pruning trees, by the Professor of Arboriculture in the garden of plants at Rouen, in France.

There is hardly any branch of horticulture less understood and more neglected than judicious pruning. At this season particularly, much much may be done to promote fruitfulness, and regulate the form of the tree. Every one can understand how, by pinching off now an over luxuriant branch, or shortening instead of letting it grow and the wood mature, you *economise* sap, or concentrate in the remaining branch what would otherwise have gone to form useless wood, to be pruned off next winter or spring. This concentration of sap often developes *fruit buds*, where otherwise there would only have been *growth buds*. There is no more interesting branch of horticulture than this frequent attention to pruning, watching the development of branches, training and regulating their shape, so as to admit free access of all to sun and air. It is not much attention that is wanted, but *little and often*. We hardly know which of the two evils among fruit growers is most prevalent: entire neglect of pruning, or unsparing injudicious mutilation with axe and saw. We commend the following rules to the attention of all our readers:

"The theory of the pruning of fruit trees rests on the following six general principles:

"1. The vigor of a tree, subjected to pruning, depends, in a great measure, on the equal distribution of sap in all its branches.

"In fruit trees abandoned to themselves, the sap is equally distributed in different parts without any other aid than nature, because the tree assumes the form most in harmony with the natural tendency of the sap.

"But in those submitted to pruning, it is different; the forms imposed on them, such as espalier, pyramid, vase, &c., change more or less the normal direction of the sap, and prevent it from taking the form proper to its species. Thus nearly all the forms given to trees require the development of ramifications more or less numerous, and of greater or less dimensions at the base of the stem. And, as the sap tends by preference towards the summit of the tree, it happens that, unless great care be taken, the branches at the base become feeble, and finally dry up, and the form intended to be obtained disappears, to be replaced by the natural form, that is a stem or a trunk with a branching head. It is then indispensable, if we wish to preserve the form we impose upon trees, to employ certain means, by the aid of which the natural direction of the sap can be changed and directed towards the points where we wish to obtain the most vigorous growth. To do this we must arrest vegetation in the parts to which the sap is carried in too great abundance, and on the contrary favor the parts that do not receive enough. To accomplish this the following means must be successively employed:

"1. Prune the branches of the most vigorous parts very short, and those of the weak parts long. We know that the sap is attracted by the leaves. The removal of a large number of wood-buds from the vigorous parts, deprives these parts of the leaves which these buds would have produced; consequently the sap is attracted there in less quantities, and the growth thereby diminished. The feeble parts being pruned long, present a great number of buds, which produce a large surface of leaves, and these attract the sap and acquire a vigorous growth. This principle holds good in all trees, under whatever form they may be conducted.

"2. Leave a large quantity of fruit on the strong part, and remove the whole, or greater part, from the feeble. We know already that the fruit has the property of attracting to it the sap from the roots, and of employing it entirely to its own growth. The necessary result of this is, what we are about to point out, viz., that all the sap which arrives in the strong parts, will be absorbed by the fruits, and the wood there, in consequence, will make but little growth, while on the feeble parts, deprived of fruits, the sap will all be appropriated by the growing parts, and they will increase in size and strength.

"3. Bend the strong parts and keep the weak erect. The more erect the branches and stem are, the greater will be the flow of sap to the growing parts; hence, the feeble parts being erect, attract much more sap than the strong parts inclined, and, consequently, make a more vigorous growth, and soon recover their balance. This remedy is more especially applied to espalier trees.

"4. Remove from the vigorous parts the superfluous shoots as early in the season as possible, and from the feeble parts as late as possible. The fewer the number of young shoots there are on a branch, the fewer there

are of leaves, and consequently the less is the sap attracted there. Hence, in leaving the young shoots on the feeble part, their leaves attract the sap there, and induce a vigorous growth.

"5. Pinch early the soft extremities of the shoots on the vigorous parts, and as late as possible on the feeble parts, excepting always any shoots which may be too vigorous for their position. By thus pinching early the strong part, the flow of sap to that point is checked, and naturally turns to the growing parts that have not been pinched; this remedy is applicable to trees in all forms.

"6. Lay in the strong shoots on the trellis early, and leave the feeble parts loose as long as possible. Laying in the strong parts obstructs the circulation of the sap in them, and consequently favors the weak parts that are loose. This is only applicable to espaliers.

"7. In espalier trees, giving the feeble parts the benefit of the light, and confining the strong parts more in the shade, restores a balance, for light is the agent which enables leaves to perform their functions and their action on the roots, and the parts receiving the greatest proportion of it acquire the most vigorous development.

2. "The sap acts with greater force and produces more vigorous growth on a branch or shoot pruned short, than on one pruned long. This is easily explained. The sap acting on two buds must evidently produce a greater development of wood on them, than if it were divided between fifteen or twenty buds.

"It follows from this, that if we wish to obtain wood branches, we prune short, for vigorous shoots produce few fruit buds. On the contrary, if we wish to obtain fruit branches, we prune long, because the most slender or feeble shoots are the most disposed to fruit.

"Another application of this principle is to prune short for a year or two, such trees or parts as have become enfeebled by overbearing. (This principle deserves especial attention, as its application is of great importance.)

3. "The sap tending always to the extremities of the shoots causes the terminal bud to push with greater vigor than the laterals. According to this principle, when we wish a prolongment of a stem or branch, we should prune to a vigorous bud, and leave no production that can interfere with the action of the sap on it.

4. "The more the sap is obstructed in its circulation, the more likely it will be to produce fruit buds. This principle is founded on a fact to which we have already had occasion to refer, viz., that the sap circulating slowly is subjected to a more complete elaboration in the tissues of the tree, and becomes better adapted to the formation of fruit buds.

"This principle can be applied to produce the following result: When we wish to produce fruit buds on a branch, we prevent a free circulation of the sap by bending the branches, or by making annular or circular incisions on it; and on the contrary, when we wish to change a fruit branch into a wood branch, we give it a vertical position, or prune it to two or three buds, on which we concentrate the action of the sap and thus induce their vigorous development.

5. "The leaves serve to prepare the sap absorbed by the roots for the nourishment of the tree, and aid the formation of buds on the shoots. All trees, therefore, deprived of their leaves are liable to perish. This principle shows how dangerous it is to remove a large quantity of leaves from trees, under the pretext of aiding the growth or ripening of fruits, for the leaves are the nourishing organs, and the trees deprived of them cannot continue to grow, neither can the fruit; and the branches so stripped will have feeble, ill-formed buds, which will, the following year, produce a weak and sickly growth.

6. "Where the buds of any shoot or branch do not develope before the age of two years, they can only be forced into activity by a very close pruning, and in some cases, as the peach, this even will often fail. This last principle shows the importance of pruning the main branches of espaliers particularly, so as to ensure the development of the buds of their successive sections, and to preserve well the side shoots thus produced, for without this, the interior of the tree will become naked and unproductive, and a remedy will be very difficult."

Dwarf Fruit Trees.

The intention of *names* being to designate *things*, the term dwarf as usually understood and applied to Fruit Trees, is unfortunate, giving as it often does entirely a wrong impression.

The belief is very common that a dwarf Pear or Apple tree, means one that will only grow four or five feet high, and bear perhaps at the most a dozen specimens. Many also understand the term to apply to the fruit itself, which they think only grows to about half the ordinary size,

We have surprised many persons, by telling them that we have weighed Duchesse d'Angoulemé Pears from what are called dwarf trees, reaching, nineteen and half ounces and that we could show them dwarf trees in this city twelve to fifteen feet high, and bearing from five to six bushels of Pears annually. What is usually meant by a dwarf Pear tree, is one grafted on a Quince stock, with branches starting out near the ground, and not trimmed up to the usual height for standard trees.

The operation of making dwarf Pear and Apple trees, is performed by budding the former on Quince, and the latter on Paradise or Doncain stock. This has the effect with *many varieties* of *restraining* a very rapid growth, and developing early fruiting, although this latter depends much on judicious pruning. Such trees are made to branch out, one or two feet from the ground, not only on account of the convenience of picking the fruit but also because the shape of the head, and the shortening in process of the branches, is within easier control. The common practice of letting branches start at the height of six or seven feet is sanctioned neither by convenience or sound philosophy. With a variable climate, and sudden alternations of heat and cold, wet and dry, the exposure of a naked trunk to such influences, often affect its thriftiness, producing blight and other diseases, and sometimes destroying life. This is particularly the case with Cherry and Pear trees. When the branches are low, they answer a valuable purpose in shading and protecting the trunk, and both on dwarf and standard, trees, in this respect, nature should be more closely followed. An objection is made to it, that the grass will not grow underneath, and that the passage among the

trees is interrupted. Things ought to be kept in their proper places. A Lawn in front of the house, should be reserved for shade, not fruit trees. There is always a separate vegetable garden, and there ought also to be a fruit garden reserved exclusively for fruit trees. These require particular treatment, and attention, such as occasional ploughing up of the ground, which is impracticable in a lawn, but absolutely necessary, for a thriving orchard.

Spreading Manure ---Mulching.

After Harvest, one of the first and most important operations on the farm requiring attention, is the hauling out of manure, and preparation of the ground for wheat. Practical farmers differ much on these points, some recommending but a single ploughing others ploughing *twice*, some spreading but a small portion of their manure at a time, and ploughing it down as soon as possible to prevent loss by evaporation; others prefering to spread it early and allow it to lay as long as possible exposed to the hot sun. Upon inquiring of this latter class, and quite a numerous one too, they have replied to us, as a reason for their doing so "that the manure is *sour*, and the *sun sweetens* it. We have repeatedly heard cases cited of experiments tried side by side, in one case of manure being ploughed down as soon as possible, and in the other of letting it be exposed for weeks, to the atmosphere, and the wheat on the latter proved far heavier, other circumstances being the same.

Practical results, are the best tests of the soundness of any theory, *They* are what farmers most care for, who are right too in rejecting all scientific explanations, not confirmed by their own experience, or which is disproved by their constant practice. Still the saddle should be put on the right horse. The failure or success of any operation on the farm, must be traced to its *true* cause. It is hardly doing justice to the patient explorer of the arcana of nature to interrupt his chain of inductive reasoning, by attributing results to causes with which they have no connection whatever, and then exclaim against book farming.

In the case of alleged benefit, from exposure of manure to the surface, the result is *truly* attributable, not to the manure "being *sweetened*," by the hot sun, but to the mulching or covering of the suface of the ground, and which would have been produced equally by dry straw, hay, shavings. At least this has always been our opinion.

Barnyard manure may *lose* its most valuable ammoniacal constituents, by exposure, and evaporation, but it cannot possibly *gain* anything. The theory if it proves anything, proves too much. Were it true, instead of keeping our manure under sheds, covering with straw or earth to preserve and absorb its valuable juices, we should be continually turning it over so as to expose every portion to evaporation and thus *entirely* get rid of the "sourness." This we all know is opposed to the practice of every good farmer. Mulching the surface of the ground, with a view to fertilize it, is pursued in England, as a regular system, under the title of Gurneyism. In this country we know but little about it, excepting as an application around trees, strawberry beds &c., but in so changeable a climate as ours, there is no doubt it would often be found very valuable.

Waring in his Elements, says the improvement from mulching arises 1st.,

"1. The evaporation of water from the soil is prevented during drought by the shade afforded by the mulch; and is is therefore kept in better condition, as to moisture and temperature, than when evaporation goes on more freely. This condition is well calculated to advance the chemical changes necessary to prepare the matters—both organic and mineral—in the soil for the use of plants.

2. By preventing evaporation, we partially protect the soil from losing ammonia resultant from decaying organic matter.

3. A heavy mulch breaks the force of rains, and prevents them from compacting the soil, as would be the result, were no such precaution taken.

4. Mulching protects the surface-soil from freezing as readily as when exposed, and thus keeps it longer open for the admission of air and moisture. When unprotected, the soil early becomes frozen; and all water falling, instead of entering as it should do, passes off on the surface.

5. The throwing out of winter grain is often prevented, because this is due to the freezing of the surface-soil.

6. Mulching prevents the growth of some weeds, because it removes from them the fostering heat of the sun.

Many of the best nursery-men keep the soil about the roots of young trees mulched continually. One of the chief arguments for this treatment is, that it prevents the removal of the moisture from the soil and the consequent loss of heat. Also that it keeps up a full supply of water for the uses of the roots, because it keeps the soil cool, and causes a desposit of dew.

7. It also prevents the "baking" of the soil, or the formation of a crust."

In England they often remove the mulch from field to field, and consider that it pays well for the expense.

We have entire faith from our own experience in mulching the surface of the ground, for several of our crops, besides its more customary application, around the trunks of trees but we have no confidence whatever in exposing manures to evaporation, or allowing their juices to drain away, for want of protection and covering.

Farmers' Reading Room in Philadelphia.

There are some projects to promote the Public Interests which when once suggested, excite general surprise that they had not been started before, their utility being so very apparent. Of this character we think is the plan for a reading room in Philadelphia for farmers. The Philadelphia society for promoting agriculture have under appointment a committee, to confer with other committees from several of our neighboring counties, who now have the matter in hand, and are looking out for a suitable location. The market taverns, being generally along market street, some place within a square of that street is urged by many as most desirable. To carry out the object fully we think the room should be open at all

times both day and evening, lighted and warmed, when the season requiries it, so as to make it a pleasant place of resort not only for market farmers, who attend the city regularly, but also for our agricultural friends at a distance who come occasionally. There ought to be found at all times on the table, agricultural periodicals from every section of the Union, and also the leading standard agricultural works.

Models of new and improved implements would also soon find their way there, and we believe the reading room once fairly started, on a suitable scale for convenience and comfort, would be found a general rendezvous for the friends of agriculture, from both near and distant points.

The report of the joint committee is looked for with much interest.

Horticulturist.

The first number of the above, since its removal to Philadelphia has fully satisfied public expectation, and gratified its friends in every section of the union. The new editor shows himself fully equal to his position and while fully acknowledging the deserved reputation of the Horticulturist, under the control of Downing and Barry, we must also say from the number before us, and as a matter of justice all around, that we consider it *in no respect* inferior to any which have preceded it.

The price is as usual $2. per year. R. P. Smith, Publisher 17 & 19 Minor st. Philad.

Industrial and Agricultural Exhibition at Doylestown.

The above display of our Bucks County friends, will come off on the 21, 22, 23, and 24 of present month.—They have issued a famous handbill, with an engraving of a miniature Crystal Palace on its face indicating we presume the shape and proportions of the building erected to display the various articles of competition. The premium list is of the most extensive character, embracing a gentleman's department, "a ladies and artist's department," a "father's and mother's department" for babies, "equestrian department, &c. Three addresses are to be delivered, one on Tuesday by Horace Greely, on Wednesday by John P. Hale, and on Thursday by some other distinguished speaker. Our friends are proposing to take a wide swathe, and we hope they will be successful.

Tall stalks of Wheat and Rye in Pennsylvania.

If any of our readers, can exceed the following, we shall be glad to hear from them.

Peter Wagner, Esq., of Limestone in Montour Co., exhibited this season some stalks of rye, measuring eight feet two inches ; and wheat five feet ten inches.

Jacob Sechler sen. of Danville in same county, exhibited, stalks of wheat measuring seven feet, eleven inches and a quarter, The heads of the latter, as well as the grains, were large and well filled.

Fruit Growers Hand Book.

By W. G. Waring, Boalsburg Pa.—The above is a very valuable compendium of knowledge for the Fruit Grower, which ought to be more generally known. Part 1st. contains an extensive list and description of the most valuable fruits in cultivation, and Part 2d. directions "how, when and where to plant, with rules for the successful and economical culture of Fruit Trees and Plants." It is illustrated with engravings, and deserves extensive circulation. Were such works more sought for and studied we should not hear of so many failures in tree planting and so much inferior fruit.

Drilling Wheat.

As the season for seeding is again at hand, we would urge every farmer, who does not own a wheat drill, to procure one without delay. Were there not other inducements to do so, the experience of last winter of the advantages of drilling would be conclusive. We heard of many places, and indeed in nearly every neighborhood in this section of the State, there were cases where the drilled wheat stood the winter well, and has since yielded a plentiful harvest, while that sown broadcast, and covered with the harrow, was very much killed out and injured. The reasons in favor of drilling in are, that the wheat is covered deeper, it is dropped and covered with more regularity, and it requires less seed. Pennock's improved grain drill is probably as *perfect* an implement for this purpose as can be devised. It is calculated for wheat, oats and grass seeds, is well made, and at the same time free from all complexity. It can be thrown in and out of gear by a single movement. After experiments for a series of years to adapt it entirely to the wants of the farmers, the Messrs. Pennocks, inventors and manufacturers, consider their present drill as combining every thing that can be wanted. The price of the seven tubed drill is $65; eight tubed, $70; nine tubed, $75; ten tubed, $80. The grass seed sower costs an additional $10 ; oats sower, $5 ; and the guano attachment, $15. We give these prices for the information of our friends at a distance who may wish to order.

Domestic Recipes.

WASHINGTON FRITTERS.—Boil four large potatoes; peel them; and, when cold, grate them as fine as possible. Mix well together two large table-spoonfuls of cream, two table spoonfuls of sweet white wine, half a grated nutmeg two table spoonfuls of powdered sugar, and the juice of a lemon. Beat eight eggs very light, (omitting the whites of two,) and then mix them gradually with the cream, wine, &c., alternately with the grated potatoe, a little at a time of each. Beat the whole together at least a quarter of an hour after all the ingredients are mixed. Have ready, in a frying-pan over the fire, a large quantity of boiling lard; and when the bubbling has subsided, put in spoonfuls of the batter, so as to make well-formed fritters. Fry them a light brown, and take them up with a perforated skimmer, so as to drain them from the lard. Lay them on a hot dish, and send immediately to table. Serve up with them, in a boat, a sauce made in the proportion of two glasses of white wine, the juice of two lemons, and a table-spoonful of peach-water, or a glass of rose-water. Make the sauce very sweet with powdered white sugar, and grate nutmeg into it.

These fritters may be made with boiled sweet potatoes, grated when cold.

Bread Fritters.—Pick, wash, and dry half a pound of Zante currants, and having spread them out on a flat dish, dredge them well with flour. Grate some bread into a pan, till you have a pint of crumbs. Pour over the grated bread a pint of boiling milk, into which you have stirred, as soon as taken from the fire, a piece of fresh butter, the size of an egg. Cover the pan, and let it stand an hour. Then beat it hard, and add nutmeg, and a quarter of a pound of powdered white sugar, stirred in gradually, and two table-spoonfuls of the best brandy. Beat six eggs till very light, and then stir them, by degrees, into the mixture. Lastly, add the currants, a few at a time; and beat the whole very hard. It should be a thick batter. If you find it too thin, add a little flour. Have ready over the fire a hot frying pan with boiling lard. Put in the batter in large spoonfuls, (so as not to touch,) and fry the fritters a light brown. Drain them on a perforated skimmer, or an inverted sieve placed in a deep pan, and send them to table hot. Eat them with wine, and powdered sugar.

Instead of currants, you may use sultana raisins, cut in half and well floured.

Orange Tarts.—Take six or seven fine large sweet oranges; roll them under your hand on a table to increase the juice, and then squeeze them through a strainer over half a pound or more of powdered loaf-sugar. Mix the orange-juice and the sugar thoroughly together. Use *none* of the peel. Break twelve eggs into a large shallow pan, and beat them till thick and smooth. Then stir in, gradually, the orange-juice and sugar. Have ready a sufficiency of the best puff-paste, roll it out thin, and line some patty-pans with it, having first buttered them inside. Then fill them with the orange-mixture, and set them immediately into rather brisk oven. Bake the tarts a light brown; and when done, set to cool. When quite cold, take them out of the patty-pans, put them on a large dish, and grate sugar over their tops.

Lemon tarts may be made in a similar manner, but they require double the quantity of sugar.

For baking tarts it is well to use (instead of tin patty-pans (small deep plates of china or white-ware, with broad flat edges, little soup-plates. You can then have all round the edge a rim of paste ornamentally notched. In notching the edge of a tart, (this must, of course, be done before it goes into the oven,) use a sharp knife.—Make the cuts at equal distances about an inch broad, so as to form squares. Turn upwards one square, and leave the next one down; and so on all round the edge. This is the *chevaux-de-frize* pattern. For the shell-pattern, having notched the edge of the paste into squares, turn up one half of *every* square, giving the corner a fold down. The paste should always be thickest round the rim or edge.

All tarts are best the day they are baked; but they should never be sent to table warm.

A Sweet Omelet.—Break small in an earthen pan six maccaroons made with bitter almonds, and mix with them a dozen orange-blossoms pounded to paste. If the orange-flowers are quite blown, the fragrance and flavour will be finer. If more convenient, substitute for the blossoms a large wine-glass of orange-flower water. Add six ounces of powdered loaf-sugar, and mix all well together. Separate the whites from the yolks of six eggs. Beat the yolks in broad earthen pan till very light and smooth, and add to them, gradually, the other ingredients. Have ready the whites beaten to a stiff froth, and stir them in at the last, a little at a time. Put four ounces of fresh butter into an omelet pan (or a small, clean, short-handled frying-pan, tinned or enamelled inside.) Set it over hot coals, and when the butter is all melted put in the omelet-batter; which some one should continue to beat till the last minute. When the omelet has become hot and has begun to colour, transfer it to a well buttered dish. Place it instantly in a rather brisk oven and bake it from five to ten minutes, till it is a light-yellowish brown, and puffed up high. Sift powdered sugar over it as quickly as possible, and carry it immediately to the dinner-table; handing it round rapidly for every one to take a piece, as it falls very soon.

These omelets are served up at dinner-parties immediately on the removal of the meats.

They must be made, cooked, served up, eaten with great celerity. Therefore it is not usual to commence mixing a sweet or souffle omelet, till after the company has set down to dinner.

If exactly followed, this receipt will be found excellent.

An Address by Governor Bigler.

The Philad. Society for Promoting Agriculture, has secured the services of Ex-Gov. Bigler, as orator on the occasion of its exhibition in September. This will add much to its interest, and a sound, practical and valuable address may be expected. Appearances indicate that the exhibition will be a most successful one, creditable to the society and to the city

Sale of Short Horns.

The fine herd of short-horns belonging to Mr. John S. Tanqueray, at Hendon, near London, was sold by auction last week, by Mr. Strafford, and realized very high prices—77 cows and heifers nearly 6000*l*., and 23 bulls about 2000*l*. The largest amount for any single animal was 500 guineas, for a splendid red roan cow, named "Oxford," calved in August, 1849, and knocked down to Mr. Gunter. "Marmaduke," a roan bull calf, 11 weeks old, realized 100 guineas. The most extensive and spirited buyers were from the United States and from Adelaide, Australia. Prince Albert, the Earl of Burlington, Lord Feversham, Sir Chas. Knightly, Mr. Topham, Mr. Jonas Webb, and Mr. Kirkham, were also announced as purchasers.

On Friday last, the celebrated stock of short-horned cattle, the property of the late John Bolden, Esq., of Hying, Lancashire, was sold by Mr. Strafford. Mr. Torr bought the highest priced animal, viz., Lady Hopetown, for 20gs,, and Gertrude for 100 gs.

Frosted Potatoes.

Frosted potatoes may be rendered as good as ever by being soaked for about ten minutes in salt and water previous to boiling.

Shorthorns, their Pedigrees, and Milking Powers.

In my last letter to you on the subject of short-horns, I mentioned that I had a cow in calf to the Duke of Glo'ster (11382). On Saturday last, the 9th of June, she produced a fine roan calf, which to my great satisfaction proved to be a bull. As the births of thorough-bred foals are recorded as they occur, so it would not be uninteresting if the births of the highest bred calves of the short-horn race were chronicled in like manner. In modern times, the latter have brought prices quite as high as the former, and they certainly are as well worth them, since they conduce in an equal degree to the improvement of their race. In order to sustain the claim of my calf to the honour of his name appearing in your columns, I add the pedigree of his dam:—Ferret-Roan, of 1849 (bred by Mr. G. Bell), by 4th Duke of York (10167); dam, Fancy by Duke of Northumberland (1940); grandam, Fanny by Shorttail (2621); gr. g.-dam. Fletcher the 2d by Belvidere (1706); gr. gr. g.-dam, by a son of Young Winyard (2859), descended from Mr. J. Brown's old Red Bull.

It will be evident to any one conversant with the pedigrees of Mr. Bates' herd, that there is much very close breeding in that of my calf, and yet he far exceeds any calf I have bred this year in size and stoutness; in fact, his size is considerably above the average. This is another confirmation of the truth of Mr. Bates' view, that although to breed in and in from bad stock was, to use his own expression, "ruin and devastation," yet that the practice may be safely followed within certain limits where the animals so related are descended from first-rate parents, and are themselves of undeniable excellence. In this, as in every other point, success or failure depend upon the judgment of the breeder. It is, however, so much more common for men to over-estimate the merits of their own stock than to rate them too low, that it cannot but be useful to breeders carefully to guard against this tendency in themselves. It is certain that he who keeps his eyes open to excellence, wherever it exists, and avails himself of it whenever it is within his reach, will in the end have a better herd than he who, taking it for granted that his stock is perfection, never troubles himself to look beyond it. The history of short-horn breeding affords abundant evidence of the truth of this maxim, from the time when Mr. C. Colling purchased Hubback, which though of unknown pedigree, is an ancestor of many of our best short-horns, down to the introduction of Cleveland Lad by Mr. Bates into his herd.

I think that Mr. Horsfall, in his interesting record of his dairy practice, does not state whether he adheres to any one breed of cows, or whether he purchases such as he conceives best adapted for milking, irrespective of any other consideration. It would be both useful and interesting, however, if he and other agriculturists would state the results of their experience of the milk-producing powers of the principal breeds of cattle in the kingdom. As regards the short-horns, there is, I believe, a prevalent notion that they are indifferent milkers. Although facts may seem to lend a certain degree of support to this opinion, it is nevertheless a mistake which an impartial investigation must dispel. In the first place, the principal ancestors of the improved short-horns—the old Holderness cows—were, and are still, the deepest milkers in the kingdom. Is it likely then, that these descendants should wholly have lost this valuable property? It may, indeed, be alleged that the celebrated cross with the Galloway cow resorted to by Mr. C. Colling, may have produced injurious consequences in this respect. I think that the effects of this "alloy," whether for good or the reverse, have been over estimated, inasmuch as the cow "Lady," from which this family is descended, had only one-sixteenth of the Galloway blood in her veins. As Favourite (252) was quite unconnected with the "alloy," as were also several other celebrated originals of the short-horns, it is evident that the union of them with the cow Lady would give one thirty-second of that cross in the next generation. Except, therefore, in those herds where the "alloy" has been purposely followed out, it may be estimated that from one-fortieth to one fiftieth of Galloway blood is the utmost proportion which exists in modern short-horns, and it is obviously insufficient to obliterate any well established property belonging to the original race.

But leaving the domain of speculation to pass to that of fact, are the improved short-horns good dairy cows or not? From a considerable mass of evidence which I have collected to prove the affirmative of this proposition, my limits here only allow me to refer to the pamphlet of the Rev. H. Berry, who gives a long list of cows of the highest pedigree, with the measured quantity of milk given by each. Several of these gave 24 quarts daily; one 32, another 36, and one as much as 38 quarts. From this authentic testimony as to the early character of the breed, I must pass on to the valuable article of Mr. Dickenson (Journal of the Royal Agricultural Society, vol. xi.) on the farming of Cumberland, and the perusal of which I recommend to all who are interested in this subject. He mentions a high-bred cow called Kate, which gave 13 quarts at a meal, and from this quantity yielded at the end of a week 26 lbs. of butter. About the fact itself there can be no doubt, resting as it does on the testimony of the owner, Mr. Fisherson, of Harker Lodge. Another cow mentioned by Mr. Dickenson produced in 32 weeks 373 lbs. of butter, being at the rate of 11⅔ lbs. per week.

My own experience on the subject is, that while their milking powers are at least equal to those of any other breed, they possess over all others the great advantage of keeping their condition on food on which common cows would starve. I am far from maintaining that all short-horns are good milkers. Two causes have contributed to injure them in this respect; 1st. That being a point to which many breeders are indifferent, they have selected their originals and continued to breed solely with reference to symmetry, size, and the propensity to early maturity. As therefore not only good qualities but the lack of them descend, it cannot be surprising that many short-horns give but little milk. 2d. From the emulation of breeders to show the finest animal at the earliest age, a system of pampering is begun at birth and carried on until the animal is either sold or slaughtered, which from the premature development of fat which it produces, tends to depress every other vital function. This system, unfavorable as it is for allowing the milk producing powers to develop themselves in any individual subjected to it, is fatal when pursued for generation after generation. After a time, "function," to use the words of Dr. Playfair, "begins to react on organization," and a tribe of bad milkers is formed, among which individuals may even occur which will give no milk. Most sincerely do I wish that the forcing system was utterly exploded, injurious as it is alike to the short-horns themselves and their reputation. If they will not thrive on the ordinary keep of other breeding stock, the sooner they are abandoned the better. But it is their pre-eminent merit that they are the best thrivers in existence. As milkers, when well selected and rationally treated, it is not easy to find cows which will excel them. Sometimes even they will at one and the same time give large quantities of milk, and carry a great deal of flesh, although this is not in general desirable.

When I think of the number of good milkers I have known

among the short-horns, and remember that it was an original characteristic of the tribe, it appears to me of great consequence, considering the national importance of dairy produce, to use every exertion to render so valuable a quality permanent. Good milkers are not over abundant among any variety of the vaccine species, and are most scarce among ill-bred mongrels. Mr. Atten, of Longcroft, had two or three years a white cow of the name of Penguin, descended from the stock of Mr. Robertson, of Ladykirk, which was an extraordinary milker. Colonel Kingscote's cow Honeysuckle is remarkable even in his herd, where this point is so successfully cultivated, for the same quality. Mr. Sainsbury is strenuous in attaining high excellence here as in every other point. Among my own cows, which are milking better this year than I ever knew them before, I may be allowed to name one which at nine years old is a most extraordinary milker, viz., Jessy, bred by Mr. R. Bell. She is by Napoleon (10552) dam by Cleveland Lad (3407); &c., and has bred a prize heifer. She may therefore be cited as a proof that it is possible to combine the quality for which I am contending with the best short-horn blood.

In conclusion I may add that I am preparing for publication an article on the breeding of short-horns, and shall therefore feel obliged for any communications from breeders containing facts in reference to this or other points worthy of notice. I shall also be glad to show my small herd to any breeder who may happen to be visiting this neighborhood. They are as hardly kept as those of any neighboring farmer, and as my object is to make cheese, the calves are weaned from new milk at an earlier age than is usual among the breeders of short-horns.—*Willoughby Wood, London Agricultural Gazette.*

The Greatness of Little Things.

In Lieut. Maury's recent work on the Physical Geography of the Sea, he gives the result of microscopic examinations of some shells drawn up from the bottom of the Atlantic Ocean, where it is more than two miles in depth. These shells are so minute that to the naked eye they appear like common dust or clay, although not a grain of sand is among them; and yet are so preserved that their most delicate edges are perfect. It would require a larger grave to hold all the small insects of the world than all the elephants. The smallest insects of the ocean, not the largest, are the most important occupants, and the microscopic shell fish create more important changes than the whales.

It has been the great error of historians, statesmen, and politicians, to lose sight of this truth. They look entirely at the whales, *the big fish,* and seem to consider these as the monarchs of the deep sea of politics, and they alone have a right to swim there. If the French Emperor flounders, or the Russian Autocrat turns over on his side and dies, each contortion is truly chronicled. But in the mean time, what do we hear of the progress of the people, the industrious classes, *the small fish?* They are the true monarchs of this great and wide sea of politics after all. They form the strata by which the geologist of history will hereafter mark the progress of this age, and classify all its products, and upon the basis of which all future society will develop itself. Take care of the poor and the rich will take care of themselves. Educate the masses, and there will arise from the number a sufficiently large class to generalize their ideas, and carry out their principles. Reform the people, make them temperate, truthful and virtuous, for they give tone and temper to the age and to the country, determining the character of its leaders, far more than the leaders that of the masses.

And so in individual life and character. It is little things that make and unmake us all. There are thousands of young men of genius and enterprise at this moment, who dream of fame and distinction, and who, if it only required some great act of daring or sacrifice within the scope of human possibility to become distinguished, would be heroes; but because true eminence is only to be attained by a persevering application in a number of daily virtues, are constantly at war with the whole scheme of things, and esteem it a very badly governed world in which they find no higher place.

It is a man's habit of dress, demeanor and conversation, that make or unmake friends, on which his success and happiness in life depend. It is on a man's little habits of eating and drinking, or loitering over trifles, or knowing how to brush them aside, that his character of idleness or industry, and the occupation of the largest part of time depend. It is the way in which a man takes care of the pennies in his pecuniary transactions, that determines whether he will ever take care of pounds.

Little habits drive nails into our coffins. They more than make up by their number, what they seem to lack in individual importance. They are the true seeds of character. We might as well plant acorns, and not expect them to grow, as cherish small vices and not calculate on their increase; or as reasonably hope to see the firm and noble oak where no acorns were ever planted, as true greatness and success in life, where the seedlings of a thousand little habits of industry and virtue had not been first carefully cherished.

In a word, character is the sum of little things, rather than great ones. The true estimate of an individual is not ascertained by his accidental or occasional achievements, but his every day habits. A nation's character is not determined by its famous men, but by the habits of its masses, and the character of the age by the vices or virtues that were so inherent as to be unnoticed.—*Exchange.*

A Few Hints on Budding.

A VALUABLE AND TIMELY ARTICLE.

Budding, or *inoculation,* is one of the most general, and, in this country, by far the most important method of summer propagation. This operation consists in removing a bud from the variety to be propagated, and inserting it on another which is called the stock. Its success depends upon the following conditions:—In the first place, there must be a certain degree of affinity between the stock and the parent plant from which we propose to propagate. Thus, among fruit trees, the Apple, Crab, Pear, Quince, Mespilus, and Mountain Ash, all belong to the same natural family, and may be worked upon each other. The Plum, Apricot, Nectarine, Peach and Almond, form another natural division, and work upon each other. The Cherry must be worked upon some kind of Cherry, and Currants and Gooseberries go together. In general practice the Apple is worked either upon Apple seedlings, which are called free stocks, or upon the *Doucain* or *Paradise,* which are dwarf growing species, and are used for the purpose of making small trees. The Pear is worked either upon Pear seedlings, which are called free stocks, or upon the Quince, to make dwarfs; occasionally it is worked upon the Mountain Ash and Thorn. But it must be borne in mind that while all varieties succeed on the Pear seedling, a certain number fail entirely on the other stocks we have named. The Cherry is worked either upon seedlings of what is known as the *Mazzard,* a small, black, sweet cherry, that form a very large, robust tree; or for dwarfs, on the *Mahaleb,* or perfumed cherry, which is a small tree with bitter fruit, about as large as a common pea.

In the second place, the buds must be in a proper state. The shoot, or scion budded from, must be the present sea-

son's growth, and it should be mature—that is, it should have completed its growth, which is indicated by the formation of a bud on the point, called the *terminal bud*, and the buds inserted should all be wood buds. On a shoot of this kind there are a number of buds unsuitable for working; those at the base being but partially developed, are liable to become *dormant*, and those on the point, where the wood is pithy, perish. The ripening, or maturing of the buds, must regulate the period of budding, so that the time at which any given tree or class of trees should be worked, depends upon the season, the soil, and other circumstances which control the ripening of wood. In our climate, plums usually complete their growth earlier than other fruit trees, and are, therefore, budded first; we usually have ripe buds by the middle of July. In some cases, when the stocks are likely to stop growing early, it becomes necessary to take the buds before the entire shoots have completed their growth, and then the ripe buds from the middle and lower parts are chosen. Cherries come next, and are generally worked about the first of August. The buds *must* be mature, or a failure will be certain.

In the third place, the stock must be in the right condition—that is, the bark must lift freely and cleanly from the wood, and there must be a sufficient quantity of sap between the bark and wood to sustain the inserted bud and form a union with it. Stocks, such as the common sorts of plum, pear, and cherry, that finish their growth early, must be worked early; while such as the Peach, Quince, wild or native Plum, *Mahaleb* Cherry, &c., that grow late, must be worked late. If these stocks that grow freely till late in the autumn be budded early, the buds will either be covered up, "drowned," as it is technically called, by the rapid formation of new woody substance, or they will be forced out into a premature growth.

A very great degree of sappiness, in either the stock or bud, make up, in part, for the dryness of the other. Thus, in the fall, when plum buds are quite dry, we can work them successfully on stocks that are growing rapidly. This is a very fortunate circumstance, too. Young stocks, with a smooth, clean bark, are more easily and successfully worked than old ones, and when it happens that the latter have to be used, young parts of them should be chosen to insert the bud on.

In localities where buds are liable to injury from freezing and thawing in the winter, the buds are safer on the north side of the stock, and when exposed to danger from wind, they should be inserted on the side facing the point where the most dangerous wind blows from. Attention to this point may obviate the necessity of tying up, which, in large practice, is an item of some moment.

In the fourth place, the manual operation must be performed with neatness and dispatch. If a bud be taken off with ragged edges, or if it be ever so slightly bruised, or if the bark of the stock be not lifted clean without bruising the wood under it, the case will certainly be a failure. The budding knife must be thin and sharp. A rough edged razor is no more certain to make a painful shave, than a rough edged budding knife is to make an unsuccessful bud. It takes a good knife, a steady hand, and considerable practice to cut off buds handsomely, well, and quick. As to taking out the particle of wood attached to the bud, it matters little, if the cut be good and not too deep. In taking out the wood, great care is necessary to avoid taking the root of the bud with it. Then, when the bud is in its place, it must be well tied up. Nice, smooth, soft strips of bark, like narrow ribbons, are the best and most convenient in common use. Every part of the cut must be wrapped so firmly as to exclude air completely; and this should be done as quickly as possible, as the air soons blackens the inner surface of the new parts that are placed in contact.

We have thus stated briefly, for the benefit of beginners, the chief points that require particular attention in budding, or inoculation. Amateurs, who have little to do, should choose the mornings and evenings, or cloudy, cool days, to do their budding; but nurserymen must work in all weathers, and in all hours of the day; but their superior skill and quickness renders it less hazardous. When only a few stocks are to be worked, and the weather happens to be dry, a thorough watering or two will be of great service in making the bark lift freely:—*Horticulturist.*

What Food will Produce the most Wool

Peas, beans, vetches, etc., are useful for the purpose of enriching the blood, by furnishing it with large supplies of albumen, which is its principal constituent. It will be remembered that in the analysis of flesh and blood the relative proportions of their constituents are nearly identical; consequently, whatever food contains nitrogen, and the greatest amount of albumen, is best adapted to the development of flesh or muscle, and is therefore the most nutritious. Wheat, rye, barley and buckwheat, contain large quantities of albumen, especially the first two; while oats, it will have been seen, contains ten and a half per cent. of its organic elements of albumen, and *peas and beans no less than twenty-nine per cent.* What conclusion, then, is to be drawn from this? The chemical composition of horns, hoofs, hair, *wool*, and even feathers, is substantially the same; their organic elements are coagulated albumen and gelatin, and their inorganic, silica, carbonate and phosphate of lime, and the oxides of iron and maganese. Hence it will readily appear that food given to the sheep which will supply the greatest proportion of albumen, in the same ratio will increase the wool secretions, and, consequently, be productive of the most wool, *provided, however, they also hold in suitable combination the inorganic substances of wool*, without which they assimilate mostly for the formation of flesh or fat. This may be exemplified thus: a soil may be highly productive of corn, as well as a few of the cereal grains, yet for the production of wheat, it may lack the proper proportion of the phosphate and carbonate of lime, and, consequently, the berry will not only be deficient in quantity but quality.

The following table exhibits the results of the experiments of the distinguished agriculturist, De Raumer, on the effects produced by an equal quantity of several substances in increasing the flesh, tallow, and wool of sheep.

	Increase weight of living animal.	Produced wool.	Produced tallow.
	lbs.	lbs.	lbs.
1,000 lbs. potatoes, raw, with salt,	46½	6½	12½
1,000 lbs. potatoes, raw, without salt,	44	6½	11½
1,000 lbs. mangel wurtzel, raw,	38¼	5¼	6¼
do " wheat,	155	14	59½
do " oats,	146	10	42½
do " barley,	136	11½	60
do " peas,	134	14½	41
do " rye, with salt,	133	14	35
do " rye, without salt,	90	12½	43
do " meal, wet,	129	13½	17
do " buckwheat,	120	10	33

These results are said to agree with those of De Dombale, and with those of a number of other agriculturists.

It will be perceived by the above table that *wheat* produces the greatest increase in the flesh of the sheep, though but

little greater than *oats*; that *peas wheat* and *rye*, produce the greatest increase of wool; and that *barley* and *wheat* cause the greatest increase of tallow. That, as an average, grain generally gives about three times the increase in the flesh, that roots do when in equal weight; that grain produces about twice as much wool as is caused by an equal weight of roots, and several times the amount of tallow.

The legitimate conclusion from the foregoing is, that the flock-master, whose object is wool only, must rely on good hay and some straw, whose constituents are admirably adapted for the growth and perfection of wool, with a moderate allowance, daily, of ground peas and oats, and some potatoes as green food, for the greatest amount of wool; and those gross substances, oil-cake, corn-meal, ruta bagas, may be turned over to the producers of fat mutton.—*Morrell's Shepherd.*

Reaping and Mowing Exhibitions.

The *premium system*, not only for Reaping and Mowing Machines but for all other articles at our annual exhibitions, although liable to many objections, is yet probably better adapted than any thing else that can be devised to excite general interest and promote competition. Knowing the difficulties committees often labor under, we were pleased that a few years ago a scale of points was adopted by the State Agricultural Society of New York, for judging of live stock. These were established after considerable deliberation by many of her most prominent breeders; have given since great satisfaction, and have been an important aid to committees. It is now proposed by a number of prominent friends of Agriculture in New York and Pennsylvania, to establish a scale of points for Reapers and Mowers, and by settling first what is *wanted* to make a perfect machine, to afford thus some guide to committees at exhibitions, for awarding premiums according to their approximation to a recognized and established scale.

We publish below the circular which has been issued.

Scales for Reapers and Mowers.

REMARKS UPON THE SCALE:—*A Scale of Points* is necessary in Trials of Reapers and Mowers for three reasons: 1st, that a correct decision may be obtained; 2nd, that the grounds of the awards may be understood by those who wish to buy machines; and 3rd, that the awards of different committees may be understandingly compared.

It is idle for any committee, no matter how capable of judging clearly and correctly, to jump at a decision in the aggregate between the claims of rival Reapers—so many of which are established as good machines, some of them perhaps nearly equal in all important respects, and no one of which is best on every point. A comparison must be instituted between them, and a careful decision had, upon each specific point. Having a *scale* of these various points, with their relative value fairly apportioned, even an inferior committee could hardly fail to arrive at a pretty correct award.

Such has been the character of most of the trials that the decisions have little weight. The premiums at one trial are given to certain machines, and in the adjoining County or State, the verdict is reversed and other machines declared best. None of the details upon which judgment was formed, being known, it is impossible for a farmer not at the trials to get any aid from them in selecting a Reaper. Indeed, the variety of verdicts given in this blind manner, tends to confuse him; whereas had the decisions been given upon each specific point, he could by comparison of the reports, decide which Reaper was best suited to his circumstances.

One scale was prepared of 100, but to give the points lowest in importance a sufficiently high number to mark the relative differences in machines, the sum total must run far beyond that amount.

It is important for farmers to have such machines used in trials, as are ordinarily built and sold to them. They do not want to be misled by a machine of extra cost and finish, taking the highest prize. They want to see the machines tried that *they have got to buy*. Therefore, let all societies introduce a rule to this effect, and if any manufacturer is found trying to work underhandedly or unfairly on this or other points, he should be excluded from the trial and the award, at the judgment of the committee.

The above scales are not offered to the public as being perfect, but as being an improvement upon any plan as yet proposed. It has received the careful consideration of farmers well acquainted with machines, and with public trials, and has been altered so that it meets the united approval of leading persons in the agricultural societies of five different States.

It is hoped it will be generally used this year in trials, and that committees and others interested will send reports of their decisions, and communicate their views and any alterations they may suggest, to COL. B. P. JOHNSON, Secretary, State Agricultural Society, Albany, N. Y., and to DR. A. L. ELWYN, Secretary, State Agricultural Society, Philadelphia, Pa.

NOTE.—Judgment being formed by the Committee relative to each machine on each specific point according to the following scales, the machine whose aggregate reaches the highest No. is the victor; 300 being the sum total of a perfect Reaper, 212 of a perfect Mower, and 550 of a perfect combined machine.

Scale of Points in Trials of Reapers.

No.	Perfect at	
1	9	Cost of machine.
2	8	Simplicity of construction to do its work.
3	10	Facility of management, including time, and room required for turning.
4	30	Durability and reliability.
5	16	Adaptation to varied and uneven surfaces, and to cutting at different heights.
6	30	Freedom of the knife from clogging by fibrous or gummy matter.
7	9	Motive power, or power required for a given amount of work.
8	45	Manual labor in raking.
9	26	Rapidity, or amount of harvesting in a given time.
10	45	The manner of leaving the grain for binding.
11	72	Saving of grain in cutting, binding and handling, and in the stack.
	300	

To determine the relative value of points correctly, they should, as far ar practicable, be estimated by dollars and cents, though several cannot be arrived at in that manner. As a matter of convenience, those are put into the scale that can be estimated by money, at a unit for each dollar.

1st *Point*, "*Cost.*"—This I get at by supposing a machine good for five years wear, which the higher priced ones certainly are—the difference in price between the cheapest and the highest priced is $35. This amount divided among the five years, gives $7, and the interest on $35 is $2.10, making $9.10. This, therefore, is put at 9, in the scale, being a unit for each dollar.

The 2d *Point* should read, "*simplicity of construction to do its work.* The more a machine does, the more machinery may there be to do it. A Self Raker, and even a Binder, may be just as simple in its structure, as some Hand Raker, considering what it does; and to make judgment fair and equi-

table between them, the object and work must be fairly considered as well as construction.

This point is not of great importance—those following should control. For if a machine is easily managed, durable, &c., it is little matter about a piece or two more of gearing or frame.

The 3*d Point*—"Facility of management, including time and room required for turning," is so similar to the ninth point—rapidity of operation, that one of these must be set low, or too much weight will be given them.

The 4*th Point*—"Durability and Reliability," is of much more importance. Any machine, however good in other respects, in an immense evil to the farmer, if it fails in time of need. Having relied upon it to save his grain, and it proving worthless, and having made no other provisions, he is obliged to hire harvesters at largely increased cost, if indeed he can get them at all, or perhaps submit to the loss of a valuable crop, wholly or in part. Opinions would vary greatly as to the number this should be set at.

The 5*th Point*—"Adaptation to varied and uneven surfaces, and to cutting at different heights," should be set much lower than the previous one.

The 6*th Point*—"Freedom of the knife from clogging," seems to merit much consideration; though not so important in reaping as in mowing. Some machines, it is known, choke or clog by fibres being drawn in the opening of the fingers in cutting damp or wet grain. This is particularly the case where there is much undergrowth. It is important to be able to cut when the dew is on, because it is cooler, and the grain shatters less. But if the knife constantly *clogs*, little progress can be made.

☞ Thus far it has been impossible to find data by which to estimate the relative value of the points, and opinions will perhaps vary very much concerning them. But in the others, we can get sound data to base them upon, and though in carrying out the estimates some come to high figures, they are not therefore to be rejected or considered wild.

The 7*th Point*—"Motive power, or power required for a given amount of work." The difference in team required to work any two Reapers, is never more than one pair of horses,—the value of which for a harvest will vary considerably in different sections. Large farmers who have plenty of horses would only consider the cost of an extra pair as the worth of the extra grain they had to feed during the reaping. Probably putting this at the same as the 1st point, 'cost," will be fair and certainly high enough, particularly as the inconvenience of using an extra pair has its weight in the estimate of 3d point.

The 8*th Point*—"Manual labor in Raking." To establish the value of this point, it is first to be considered that there is considerable difference between *hand-raking* Reapers in the ease with which grain can be raked from them. It would not be too much to allow 10 to estimate the difference between them.

Then a *Self-Raker* saves a hand,—and that too, at the very hardest of work—over the *best* hand Raker. As wages were last year, and will be the present, this hand in harvest with his board costs at least $2.00 a day. If a little less than that in some sections, it will be enough more in others to make it equal this and more too. The wheat harvest will last from 8 to 12 days—say 10—and oats, rye, barley, &c., say 5 days. The latter is perhaps a day or two longer than southern farmers would generally have grain for, but it is too little by 5 days for the North, so that 15 days work would be a moderate allowance, making the saving $30. Something more should be added to this, because of the excessive labor that is saved, one hand being hardly sufficient to work all day long, and day after day in raking off. For this 5 is added. Add the previous 10, giving 45 for this point.

The 9*th Point*—"Rapidity, or amount of harvesting in a given time." Suppose Reapers cost on an average with transportation, $140, and are worn out in 5 years; that is $28 a year; the interest is $8.40. The team, 2 pair, $18. The Rake $30, and driver $20. The latter not having as hard work and a cheaper hand answering, his labor is estimated a little less than the raker. The total is $104.40. The narrowest Reaper cuts 4½ feet, and the widest 6 feet, (with a very few exceptions not necessary to be allowed for,) making a difference of one quarter. Then one quarter of the above figures would give the value of this point at 26.

The 10*th Point*—"Manner of leaving the grain for binding." More difference than one hand can be made in binding, by the gavels being well or badly laid. Between the best and worst machine to rake from, there is in the manner of depositing the grain, at least a difference of a hand and a half, costing for the 15 days $45, making this point therefore 45.

The 11*th Point*—"Saving of grain in cutting, binding, and handling, and in the stack." Those who have compared the working of different Reapers, know that some will save largely as compared with others, and it is very easy to make a difference of several bushels in each day's work of 10 to 15 acres, even to the amount of a bushel or more an acre, particularly if the grain is over ripe.

There is, 1st, the loss in not cutting clean; 2d, shattering by the reel and in cutting; 3d, shattering in raking off; 4th, loss from scattered grain being badly raked off; 5th, loss in handling the sheaves, the grain not having been raked straight, and consequently being imperfectly secured in the sheaf; and 6th, liability to injury in the stack by the weather if the heads are not all laid one way in the raking.

These losses, though depending much upon the hands, will all be found to exist, and greatly to vary between different machines with good hands. Some of them are trifling, yet in the aggregate they make a point of much more value than any other.

Suppose the difference of loss in extreme cases is only half a bushel to the acre,—that 120 acres of wheat and 60 acres of other grains are cut, which would be twelve acres per day for the season of 15 days. Thus there is saved 60 bushels of wheat, worth say $1 per bushel, and 30 bushels of oats, barley, rye, &c., worth say 40 cents, making the saving $72. Though 72 seems at first to be large for this point, it ought to be set higher rather than lower.

If this scale is at all correct, there is, of course, great difference in machines. If the 40 or 50 varieties invented, and of which some 30 are more or less in use, could all be brought together, some would run very low in the scale, while others would go high. Of the points in the scale 206 (less 10 in the 8th point of raking) equal 196, are estimated in money value of say only $14 a season, making $210. Some of the reapers would not in thorough trials reach 60 on these points, while others would reach 160 and over, thus showing there may be a differenc in reapers of over $100 *in a single season's use.*

With so large a difference in reapers, and the demand so rapidly increasing, and it being difficult—almost impossible, for farmers to compare them themselves, it is not strange that so many attempts should be made to test them by farmers united in their State and County societies. Yet how few of the numerous trials have as yet resulted in any permanent good! Wherefore this abortive result in efforts which have cost so much in time, labor and money to societies, committees, reaper-builders and the public generally? Is not the failure chiefly owing to the want of a systematic plan to insure thoroughness and guard against mistakes? If so, a good scale of this kind will correct the evils, and it is

useless to go into trials without something of the sort.

Scale of Points in Trials of Mowers.

No.	Perfect at	
1	9	Cost of machine.
2	8	Simplicity of construction to do its work.
3	10	Facility of management, including time and room required for turning.
4	30	Durability and reliability.
5	10	Adaptation to varied and uneven surfaces.
6	16	Adaptation to cutting close to the ground.
7	70	Freedom of the knife from clogging by fibrous and gummy matter.
8	9	Motive power, or power required for a given amount of work.
9	20	Rapidity, or amount of cutting in a given time.
10	30	The manner of leaving the grass for curing.
	212	

Remarks upon the Mowing Scale:—After the full remarks upon the Reaping Scale, it is unnecessary to add much here. The plan is easily understood. The first four points are unaltered. The 5th in reaping is divided, making the 5th and 6th, and increasing the aggregate 10. The 7th is largely increased, because of the difficulty and importance of getting machines that will cut without choking. The 8th is not altered, though it might, perhaps, be reduced. The 9th is reduced 6, because of reduction in expenses of working the Mower as compared with the Reaper. The 10th is also reduced, for though an important point, there is not the difference in Mowers in the manner of leaving the grass, to make a higher amount necessary to fairly compare them. Nearly all leave the grass spread perfectly.

Scale for Combined Reapers and Mowers.

300	The Reaper scale.
212	The Mower scale.
38	Ease of convertibility.
550	

Were all machines alike easily converted from Reaper into Mower, and *vice versa*, the best combined machine would be that which reaches the highest aggregate in the two scales; but in consequence of varying in this respect, this other point must be added, making the points in a perfect combined machine reach 550.

The Physical Laws on which the Drainage of Land Depends.

[Continued from May number.]

Whilst upon the earth's surface, the motion of water is regulated by its weight or gravity as the operating force; and that is interfered with principally by the antagonistic force of capillary attraction, by evaporation, and by the conformation of the substances over or through which it passes.

Suppose rain to fall, or water to run down a hill-side upon a flat surface below. If that surface be rock, impervious to water, it flows over the surface until it meets with a lower level, by which it passes off; whether that be a fissure in the rock, (in which case it forms a cascade, and afterwards a river in the lower ground beyond,) or by a lower level of equal capacity with that from which it flowed, (in which event it would, as before, flow evenly over it.) But if the rain descend upon soil instead of upon rock, it will be carried by its weight downwards through the soil with greater or less velocity according to the greater or less porous texture of the ground on which it falls. As soon, however, as a portion of the water is *beneath* the surface, capillary attraction begins to exercise a certain amount of force in addition to the one of gravity, which continues its influence. This attraction retains within the pores of the soil (and which may be viewed as an accumulation of minute tubes) a certain portion of the water, and the remainder only then passes downwards by the force of gravity.

It is found moreover, that the power of capillary attraction varies in different substances; and it varies also in *force*, in a ratio *inverse to the size of the tubes* in which it takes place. Vegetable soils are favorable to the increase of the force in a greater degree than clay, in so far as regards their texture, but they part with water more readily. Whilst clay, from the more minute size of its pores, commands in that respect a greater force of capillary attraction than vegetable soil, and retains water with greater tenacity.

Assume, then, sections to be made on the sides of two hills, one of sand and the other of clay, of equal height, and that rain fell on the top of each, the observer who placed himself at the section to watch the course of the descent of the falling shower through the soil, would find that the water on each hill-top would sink down perpendicularly a certain distance, and would be attracted, or sucked up, by the top-soil; but if the quantity falling was greater than the rapidity of its downward course, (owing either to the close nature of the soil, or the intervention of rock or other impediment), the surface-soil becoming saturated, the water would be seen to ooze out and run down the face of the sections of each hill. So far, the phenomena presented would be identical. But the following difference in the two sections would be noticed: the perpendicular *distance from the hill-tops*, or *surface-level*, at which the water *first oozed out*, would be found to be much less in measurement in the side of the sand-hill, than in the case of the clay-hill; and the reason is this: the superincumbent weight of water requisite to counterbalance the power of capillary attraction in the sandy soil, would be much less than that which was necessary to counterbalance the same power in the close-grained clay; and, consequently (by the natural laws above stated), the column of water above the oozing point would require to be much higher to effect the object. Inasmuch, however, as the force of capillary attraction does not prevent the passage of surplus water through the interstices, in substances upon which it is acting, whilst, on the one hand, it will always retain so much water as its power can command (and the extent of which will, as before mentioned, depend upon the nature of the substance, and the size of the tubes), it, on the other, presents no obstacle to the continued passage of water from the surface to the substrata: the velocity with which it will so pass depending upon various additional considerations.

It is upon the above data that the whole process of *Underdraining* is based.

But we must now inquire what becomes of that part of the water which is not held in suspension near the surface by capillary attraction, when, by its gravity, it has accumulated in quantities in the substrata below. The passage downward continues in perpendicular lines from the surface, until its further progress in that direction is impeded (as has been before observed) by some non-porous obstacle, when, if it cannot find vent laterally, it accumulates, and, obeying the law of finding a level, it forms a "water-line" at a given depth (sometimes called a *water-table*), which level is elevated nearer to the surface, in proportion to the quantity falling upon such surface. Thus it remains stagnant, except so far as its mass is diminished by the capillary attraction constantly going on in the soil above the water-line, which is induced to supply the loss of moisture in it,

occasioned by the evaporation which is constantly emanating from the surface.

In this condition it is that, for profitable farming, land, when this water-line is so near the surface as to interfere with vegetation, requires to be drained, no less than it does when this water stands on the surface; and this introduces to us the question of the manner of effecting that object.

A Remedy Against Mildew.

A question was asked some time since by one of our correspondents, whether sulphuret of potash had ever been employed as a remedy against *Mildew*? We cannot say whether it has been so applied in this country, but it has been used in France successfully, and if an acid be added a fine precipitate of sulphur is deposited from the aqueous solution upon the leaves of the Vine or Hop, in a manner which would not be effected by any dredging. It is, in fact, when properly diluted, precisely what is used very frequently for baths in certain cutaneous disorders. In all such applications the main question is how does sulphur act? This is evidently a point of great importance, and from the insolubility of sulphur under ordinary circumstances not very easy of explanation.

We do not profess to be in a condition to answer this satisfactorily, but the observations we have to offer may induce some one to attend a little more closely to the matter. Sulphur has evidently a very prejudicial effect on fungi, as it has indeed on all organic beings if exposed to it in a proper form and in a sufficient degree of concentration. The use of sulphur in cutaneous disorders whether arising from insect or vegetable parasites; the effect of hyposulphite of soda on the curious vegetable production known by the name of Sarcina, from its resemblance to little corded bales, which is so common in cancerous affections of the human stomach; and the destructive power which it has over parasitic moulds are all evidences of this fact. One particular instance may perhaps afford a clue to its action over the latter. It is well known that if a bundle of brimstone matches be burnt in a barrel, the fermentation of wine when placed in that barrel will be arrested. Now the fumes of brimstone consist of sulphurous acid, and as the whole body of the wine placed in the cask is affected, the quantity of the acid which is capable of arresting the growth of the yeast fungus must be almost infinitesimal. Now if the leaves of plants infested with mould are dusted with sulphur, though the sulphur is insoluble in water and may be exposed to ordinary air for a long time without change, it is very possible that the oxygen just separated from the foliage by the action of light in effecting the decomposition of carbonic acid, or arising from other chemical processes taking place within the plant, being in a nascent state, may readily combine with a portion of the sulphur, and thus form sulphurous acid, and still more in the application of a solution of sulphuret of potash with the addition of an acid, where the sulphur is in the act of being eliminated, and can combine at once, under the most favorable circumstances, with the nascent oxygen.

It would be easy for a good chemist to ascertain precisely whether sulphurous acid is really formed under such circumstances, or whether some other combination of sulphur and oxygen is given out, and it would be doing good service to the horticulturist to ascertain the point. Where sulphur is used to combat disease in the human frame, especially when applied inwardly, more than one combination takes place, and a large portion of the substance, when taken in a crude state, passes away unaltered. In its application to the purposes of cultivation it is likewise a small portion only in all probability which is effectual; and if the action could be precisely ascertained the results might be of great importance, in an economical point of view, where it is used largely, as in Hop gardens. M. J. B.

Gardeners' Chronicle.

Mistletoe on the Oak.

From an article in your last number there appears to be still a doubt as to the fact of the Mistletoe growing upon the Oak-tree. I remember having seen it once, and but once, growing upon that tree. Having (about 17 years ago) occasion to walk from Glanusk Park, in Breconshire, to Abergavenny, I took the foot-path along the bank of the Newport and Brecon canal, and in the course of my walk was most agreeably surprised at finding an old Pollard Oak completely covered with Mistletoe. I took great pains to examine the tree, and I am quite satisfied of the fact. I do not at this distance of time recollect the precise spot, but any gentleman residing in that locality who has leisure and would feel sufficient interest in the case, might set the matter at rest by procuring a portion of the tree with the Mistletoe growing upon it and sending it to your office. The Mistletoe grows plentifully upon the Apple tree in Breconshire.—*T. Ann in London Gardeners' Chronicle.*

New Artificial Stone.

The composition of sand, plaster of Paris, and blood, for which a patent has been granted, is capable of being molded into the most elaborate architectural ornaments and copies of sculpture; and it assumes the character of stone in a few hours, without baking or any other specific treatment after being molded. The manufacture of this stone is at present carried on at the Hamilton Works, Newark, N. J., and a company of men of capital has been formed, John Wood, being at the present time its Secretary. A meeting of those interested in the undertaking was held at the Metropolitan Hotel in this city, on the evening of the 15th inst., at which some beautiful specimens were exhibited, and one made, but a few hours before. These comprised, trusses, lintels, sill-tops, and bas-relief for a new store on the corner of Columbia and Carrol streets, Brooklyn, which excited admiration. These resembled the common brown free stone used for buildings in our city, and in hardness and strength were equal, if not superior to it. It grows harder with age, and its introduction for building and architectural purposes, presents in prospect the dawning of a new era in architecture, as ornamental work, like brown free stone, can be produced by molding this composition, at a cost far below that required for carving such work with the mallet and chisel.—*Scientific American.*

California Glow Worm—Natural Lantern.

The editor of the Placer Times, Cal., has seen the larvæ of an insect which was exhibited before the Callfornia Academy of Natural Sciences, by Dr. Behr, who supposes it to be a species of electer. "It is about 1¾ inches long, and has eleven segments or rings to its body. Where these join to each other is a ring of brilliant phosphorescent light, which illuminates the atmosphere for several inches round. It exhibits the most beautiful display of the kind that we ever saw. The common glow-worm, with which we have been so often amused in our boyish days, is insignificant by its side. As the respiratory apparatus of the animal is at these articulations, Dr. Behr thinks it not improbable that its illuminating process may be connected with this function of the animal."—*Scientific American.*

Glazed Flower Pots.

One objection to glazed pots, in the culture of many kinds of plants, even if there were no other with which to oppose

them, is the smoothness of their inner surface. Any one who has paid attention to the rooting of plants in pots, must be aware that many kinds delight to root amongst the broken crockage, and about any irregularity of surface in the pot; this would appear to have some assimilation with the fissures of rocks, in which it is known that some kinds delight to root; and, if this be the case, the smooth glazed pots, and the absence of all crockage might render them still less valuable. The great objection, however, to glazed pots, is the simple fact that they are *not porous*. In the culture of plants in pots, the porosity of the sides of the latter will permit the atmospheric air, composed of vital gases, to penetrate through into the soil, and thus the healthiest roots are always found in contact with the pot; but in the case of glazed pots, this percolation could not take place, and the surface of the soil alone would be exposed in any degree to the action of the atmosphere; consequently the plants would be deprived of a greater portion of their nourishment.—*Flor. Cab.*

Of the Manures from Domestic Animals and their Preservation.

The manure of various domestic animals is, in this country, most commonly employed as a fertilizer, all other manures being used in comparatively small quantities; and yet even these are seldom preserved and applied as carefully as they might, or ought to be.

The principal varieties are those of the ox, the cow, the hog, the horse, and the sheep. Of these, that of the horse is most valuable in its fresh state: it contains much nitrogen, but is very liable to lose by fermentation. That of the hog comes next. That of the cow is placed at the bottom of the list. This is because the enriching substances of her food go principally to the formation of milk, the manure being thereby rendered poorer.

The manure of all these animals is far richer than the food given them because it contains much more nitrogen. This is for the reason that a large part of the carbon and oxygen of the food are consumed in the lungs and blood generally; for the purpose of keeping up the heat of the body. They are given off from the lungs, and also by perspiration and evaporation through the pores of the skin, in the forms of carbonic acid and water.

From animals fed upon rich food, the manure is much more powerful than when it is poor. In England, for instance, where they fatten cattle largely on oil-cake, it is calculated that the increased value of the manure repays all of the outlay. This is the reason why human ordure is better than manure from any of the animals mentioned above, the food of man being rich and various.

All these kinds of manure should be carefully collected and preserved, both as to their liquid and solid parts. The liquid part or urine is particularly rich in the phosphates and in nitrogen. This part is by very many farmers permitted in a great degree to run away or evaporate. Some farmyards are contrived so as to throw the water off entirely, others convey it through a small ditch upon the nearest field. The liquid manure which might have fertilized several acres in the course of the season, is thus concentrated upon one small spot, and the consequence is a vegetation so rank as to be of very little use. Spots of this kind may be seen in the neighborhood of many farm-yards, where the grass grows up so heavy that it falls down and rots at the bottom, and has to be cut some weeks before haying time, producing strong coarse hay that cattle will scarcely touch.

The proper way to save this liquid is to have a tank or hole, into which all the drainings of the yard may be conducted. If left here long, this liquid begins to ferment, and to lose nitrogen in the form of ammonia, which it will be remembered is a compound of nitrogen and hydrogen. To remedy this, a little sulphuric acid, or a few pounds of plaster, may be occasionally thrown in. The sulphuric acid will unite with the ammonia, and form sulphate of ammonia, which will remain unchanged, not being liable to evaporate. Others prefer to mix sufficient peat, ashes, sawdust, or fine charcoal, with the liquid in tank, to soak it all up; others still pump it out and pour it upon a compost heap. One point is to be noticed in the management of a tank. Only the water which naturally drains from the stables and yards should be allowed to enter it: all that falls from the eaves of the buildings should be discharged elsewhere. Regulated in this way, the tank will seldom overflow, and the manure collected in it will be of the most valuable and powerful description. The tank may be made of stone, brick, or wood, as is most convenient, and need cost but very little.

While the liquid manure is actually in many cases almost entirely lost, the solid part is often allowed to drain and bleach, until nearly every thing soluble has washed away; or is exposed in heaps to ferment, without any covering. In such a case ammonia is always formed and given off: it may often be perceived by the smell, particularly in horse manure. The fact may also be shown, by dipping a feather in muriatic acid and waving it over the heap. If ammonia in any quantity is escaping, white fumes will be visible about the feather, caused by the formation of muriate of ammonia. A teacher can exemplify this by holding a feather, dipped in the same way, over an ammonia bottle. This escape of so valuable a substance may be in a great measure prevented by shovelling earth over the surface of the heap, to a depth of two or three inches. If this does not arrest it entirely, sprinkle a few handfuls of plaster upon the top: the sulphuric acid of the plaster will as before unite with the ammonia, and form sulphate of ammonia.

Manures containing nitrogen in large quantity are so exceedingly valuable, because this gas is required to form gluten, and bodies of that class, in the plant; this is particularly in the seed, and sometimes also in the fruit. Plants can easily obtain an abundance of carbon, oxygen, and hydrogen, from the air, the soil, and manures. Not so with nitrogen. They cannot get it from the air: there is little of it in most soils; and hence manures which contain much of it, produce such a marked effect. Not that it is more *necessary* than the other organic bodies, but more scarce; at least in a form available for plants. The same reasoning applies to phosphoric acid. It is not more necessary than the other inorganic ingredients; but still is more valuable, because more uncommon in the soil and in manures.

In all places where manure is protected from the sun, and from much washing by rain, its value is greatly increased.

a. Horse manure particularly should not be left exposed at all: it begins to heat and to lose nitrogen almost immediately, as may be perceived by the smell. It should be mixed with other manures, or covered by some absorbent earth, as soon as possible. Almost every one who enters a stable in the morning, where there are many horses, must perceive the strong smell of ammonia that fills the place. I have seen in some stables, little pans containing plaster of of Paris or sulphuric acid, for the purpose of absorbing these fumes, and forming sulphate of ammonia. *b.* The liquid which runs from barnyards and from manure heaps, is shown by analysis to consist of the most fertilizing sub-

stances; and it is calculated that where this is all allowed to wash away, as is the case in many instances, the manure is often reduced nearly one-half in its value. I have seen yards where it was almost worthless, owing to long exposure.

The farmers of this country need awakening upon the subject of carefully preserving their common manures. In Flanders, where everything of the kind is saved with the greatest care, the liquid manure of a single cow for a year is valued at $10; here it is too often allowed to escape entirely. Either they are very foolish, or we are very wasteful.

Truths Established by Agricultural Chemistry.

LIEBIG.

If the deficient ingredient be added to the soil, or an insoluble one be made soluble, the others become effective. The deficiency of *one* ingredient, makes a soil unproductive of all those plants which indispensably require this ingredient, although all others be present. The soil yields abundant crops when this ingredient is added in proper quantity and form. In cases of soils of unknown composition, experiments, with single substances, furnish means of learning the nature and deficiencies of the soil. If e. g. phosphate of lime is effective as a manure, this is a sign that the same was deficient in the soil, while all other ingredients were present therein in sufficient quantity. If any other necessary substance had been wanting, then the phosphate of lime would have manifested no action.

The action of all the soil-constituents collectively is dependent upon the simultaneous co-operation of the atmospheric plant food.

The efficacy of the atmospheric plant-food depends upon the joint-working of the soil-ingredients at the same time. When the soil contains the proper ingredients, in proper quantity and form, the development of a plant stands in ratio to the amount of atmospheric plant-food offered to and assimilated by the plant. The quantity and condition (state of solubility or absorbability) of the mineral nutritive matters in the soil, and the absence or presence of hindrances to their activity, (physical character or condition), increase or diminish the number and mass of plants that may be cultivated on a given surface. The *fruitful* soil removes, in the vegetation it supports, *more* carbonic acid and ammonia from the atmosphere than one that is unfruitful.

This removal is in ratio to the fertility of the soil, and is only limited by the limited amount of carbonic acid and ammonia present in the air.

By like supply of the atmospheric conditions of vegetable growth, the harvest stands in direct ratio to the *mineral plant-food* added in the manure.

By telluric conditions, the harvests are in proportion to the quantity of atmospheric plant-food furnished by the *atmosphere* and by the *soil*.

If *carbonic acid* and *ammonia* be added to the supplies already in the soil, its productiveness is increased.

The union of the *telluric* and *atmospheric* conditions, and their co-operation in proper quantity and form, and at the right time, determine the *maximum* of production.

The addition of a larger quantity of atmospheric plant-food (by means of humus, salts of ammonia, &c.,) than the atmosphere offers, increases the activity of the mineral substances present. In such a case the yield of a given surface would be greater. It might happen that thus in one year as much would be produced as otherwise in two years.

The produce of a *soil rich in mineral plant-food*, cannot be increased by addition of mineral substances.

The produce of a *field rich in atmospheric plant-food*, can not be increased by addition of atmospheric ingredients.

By incorporating with a soil rich in mineral nutritive matters, either ammonia alone or ammonia humus, one heavy crop, or a series of the same, may be gathered without any replacement of the removed soil ingredients. The duration of productiveness in such a case depends upon the store, the quantity and form of the mineral plant-food contained in the soil. Continuing such a course must in time exhaust the soil.

If a soil thus reduced is to be brought up to its original fertility, the soil ingredients that have been removed during the period in which it was subjected to the exhausting process, must be restored.

If in ten years the soil has yielded ten crops without restitution of the removed soil-ingredients, then in the 11th year this tenfold quantity must be replaced in the soil, if the same be destined to yield anew a like number of crops.

The foregoing fifty propositions are comprehended in a single one, viz., that the nourishment, growth and developement of plants, depend upon the absorption of certain matters, which of themselves, or by virtue of their mass, produce an effect. *This effect*, within certain limits therefore, *stands in direct ratio to their mass, and in inverse ratio to the obstacles* which hinder their action. If this proposition, whose truth can be subject to no doubt, be assumed, all the propositions are thence deducible, by subsisting the words poor or rich, fruitful or unfruitful, for the relations of quantity of the nutrilive matters; and their action the terms fruitfulness, yield, crop &c.

Whoever will take the trouble to read through my Chemistry in its Application to Agriculture and Physiology, with moderate care, will easily find therein all these propositions, No. 14 excepted, and this I shall subsequently notice.

As regard the truths of these views, it is known that from time out of mind, the action of animal excrements, and of vegetable and animal refuse, has been recognized. The first observations on the effect of ammonia, were made as I believe by H. DAVY.

The investigation of the processes of putrefaction and decay (vide my article in Annalen d. Chemie u. Phys. Bd. XXX §250, 1839), as also the discovery of the *constant* occurrence of ammonia in the air and in rain water, led me to consider that nature has provided not *several* but *one* single nitrogen containing substance as food to plants; that ammonia is the only nitrogenous body known that nature offers for this purpose, and that all other nitrogenous substances act only so far as they are capable of supplying ammonia by their decomposition.

That humus, in presence of moisture and air, is a source of carbonic acid, was long sinced proved by DR SAUSSURE. Strange to say, that philosopher, even to his latest days, denied the action of humus as a source of carbonic acid, and sought to sustain the so-called humus-theory, (Ann. d. Chem. u. Ph. Bd. 42, §275.)

To the action of humus as a source of carbonic acid, as a solvent for the phosphate of lime and of the alkaline earths, I have first directed attention, in my Familiar Letters on Chemistry, (London ed., 1851, p. 502, note.) Afterwards (1852) BOUSSINGAULT occupied himself with determining the amount of carbonic acid in the air enclosed in the soil, and found that in freshly dunged soils the quantity is often 400 times greater than in the atmosphere.

The solubility of the phosphate of lime in sulphate of ammonia, I have mentioned on page 502 of Familiar Letters on Chemistry, Eng. ed.

Several years later, KUHLMAN (Comptes Rendus, XVII. p. 1118—1130) remarked as follows:

"In order to understand fully the action of the salts of ammonia, it is necessary to point out the fact that they

serve to facilitate the passage of other substances into the plant. Phosphate of lime, phosphate of magnesia, and silica, are somewhat soluble in water containing carbonate of ammonia, and thus become absorbable. Every soil contains carbonate of lime, which is rarely free from alkali, and this under the influence of the sun's heat decomposes the sal-ammoniac and sulphate of ammonia, whereby soluble lime, salts, and carbonate of ammonia are formed. Thus the ammonia salts are not only the chief means of supplying nitrogen to the plant, but they also serve as a medium for facilitating the passage of those substances into the plant which are indispensable requisites of its development. No wonder then that they operate so favorably."

As I have shown in my work, the state of solubility or absorbability of mineral manures has the greatest influence on their effects, and for this reason it is that e. g. the hard, dense apatite (phosphorite, mineral-phosphate) paoduces in a given time a less effect than an equal weight of burned bones, and that the activity of the latter is so greatly heightened by mixture with sulphuric acid, whereby their solubility is increased.

It is all these circumstances taken together, that makes an estimate of the value of a manure so difficult; since in a certain form it may be apparently ineffective, while in another its value is at once manifest.

That the alkalies, and alkaline earths, phosphoric and sulphuric acids, are indispensable to all plants, and in addition, silica, for the cereals, has been abundantly proved by the experiments of POLLSTORF, SALM-HORSTMAR, WOLFF, MAGNUS, and others. No chemist, no vegetable physiologist, in short no scientific man, who is able to give facts their logical expression, doubts the truth of this doctrine, which, as is known, is not yet old, for DUMAS, even in 1840, obviously supporting his opinions on the investigations of DE SAUSSURE, considered the presence of these bodies in the plant as accidental. (Dumas, Statique Chemique.)

Upon the views which SPRENGEL entertained upon these substances and their part in vegetable development, I have expressed myself in the Ann. d. Chem. u. Ph. Bd. XXXVII, §226. The most that was known as to the occurrence and the importance of the mineral ingredients; in fact all that was known before 1840, with any certainty, in vegetable physiology and agricultural chemistry, was based on the investigations of DE SAUSSURE (Recherches sur la Vegetation,) and the work of DAVY, to whom I have given full credit.

All that, until that time, had been transferred into botanical and agricultural books, was a very imperfect epitome of their remarkable labors. The value of wood-ashes as a fertilizer was previously known. Already 127 years ago, HALES noticed their use at length. (Vegetable Statics, 1727.)

In the years 1845–49, I instituted a series of experiments on the action of individual mineral manures. They were conducted on a pretty large scale, on a field of about ten English acres, (16 Hessian morgen) which I received from the city of Giessen for that purpose. Former experiments which I had made in my garden in the city, gave no results; do and apply what I would, I was not able to perceive any effect from a single one of my mixtures. The single cause of this apparent inefficiency I found to lie in the composition of the garden soil, which by previous culture and manuring had become so rich in these substances, that the relatively small addition of mineral manures, completely vanished in comparison with the quantity already in the soil. This led me to the purchase of the mentioned field, a sand-pit east of the city, which I found distinguished from all other land in the vicinity by its almost perfect incapacity to support the ordinarily cultivated plants; I do not believe that in an entire year so much grass and fodder grew upon it as would sustain a single sheep.

The soil is in part a loose sand; in part it consists of a more or less coarse quartz gravel, with some strips of sand, and a little clay.

I filled a number of flower-pots with this soil, sowed therein rye, barley and red clover, and added single mineral nutritive substances to the soil; none of them brought the plants farther than the flower. This soil was accordingly adapted to my purpose.

Messrs. Schwarzenberg & Co. of Ringkuhl near Cassel were so obliging as to prepare in their Soda-works, a quantity of mineral manure according to given directions, and this was uniformly spread over the whole field, excepting a piece of vineyard of about 2000 vines, each of which received at the time of planting ¼ lb. which was mixed with the earth. On separate divisions of the field were cultivated wheat, rye, barley, clover, potatoes, beets, maize, and Jerusalem artichokes; some patches received at the same time saw-dust, one nothing but stable-manure, another a mixture of the mineral manure with an equal quantity of stable-dung. Beside this stable-dung no other animal substance, no ammoniacal manure was used on the whole field. One small plot had added to it several wagon loads of soil from a forest; another, received the same, mixed with the mineral-manure.

Several of the most distinguished agriculturists of the vicinity, among them M. V. FIRNHABER, were of the opinion that it was not possible to raise wheat or clover on this soil, and I have in memory, to this day, the judgment these men passed upon my undertaking. I had calculated for the first year upon only a small yield—the soil had never been under cultivation before coming into my hands—yet so moderate, so bad in fact, as the crops turned out, still they exceeded what I had actually expected. It would be necessary for a series of years to elapse before the constituents of the manure could become soluble and diffuse themselves throughout the soil. The barley was better on the patch manured with forest-muck and mineral manure, than upon the others. On the plot where saw-dust had been applied, the vegetation was also heavier than elsewhere. The plot manured with stable-dung and mineral-manure, gave a wheat crop equal to any in the neighborhood By the action of the saw-dust, of the organic matters of the forest-soil and of the stable-manure, I was first enlightened as to the actual operation of humus, and the decaying organic matters of the soil (vide prop. 14] and found my former views corrected and enlarged. The yield of turnips, clover and potatoes, did not, however, suffice for keeping one cow. Only the rye and a part of the potatoes were removed from the farm; everything else was consumed on it. I may hereafter, perhaps, come to notice the particulars of these experiments, and here will only remark, that, without the addition of any more manure, all the crops stood better in the second year and yielded far more produce, and that this productiveness so increased, that in the fourth year it excited the wonder of all who had known the original condition and character of the field

Four years after beginning these experiments, I had opportunity to show my little farm to the Privy Counsellor, v. BECKEDORF, President of the Prussian College of Rural Economy of Berlin, and to the State Counsellor RENNING, who, in his official capacity at Dresden, exerts such a happy influence on the Agriculture of Saxony, and remember with satisfaction the active interest these gentlemen manifested in my experiments. In 1849, my former gardener. Kappes, purchased the whole field, and the industrious man, who could not afford to buy manure, manages with profit the now well-conditioned little farm; assisted, during the summer months, by a little business in selling refreshments, he is

able to support himself and family, keeping two cows and annually raising several head of cattle; and he has acquired enough to enable him to enlargo his buildings, and all this without ammonia or humus, and only by help of mineral manures. On the effect of these fertilizers in 1853, a farmer of the vicinity [Aubel of Wiseck] wrote me as follows: "The yield of rye with us is very small; on the Heights [the little farm is known in Giessen by the name of Liebig's Heights] they have harvested 12 simmer of rye from 3 fuder [ten and three-fifth bushels from 180 sheaves.] From 3 fuder of the best rye I have only had 5 simmer [4½ bu.] If you should see it you would be astonished; it is indeed remarkable."

After the lapse of about four years, the mineral matters incorporated with the soil, came gradually into activity, and it is to be foreseen that this field will retain its fertility, if there be yearly returned to it as much soil-ingredients as are removed in the crops.

The effect of individual substances could be clearly traced, and was manifested in many cases in a truly wonderful manner. A deficiency or excess of phosphate of lime, of alkalies for root crops, of alkaline-earths for clover, of alkali-silicates for the cereals, was plainly revealed in the growth of these plants. The trial plots appeared like the writing on the leaves of a book; their significance was evident even to the uninitiated.

I have every reason to believe that the organic refuse of the crops that remained in the field, in consequence of the action of the carbonic acid, resulting from its decay, made available mineral plant-food, which had previously been unattainable to vegetation.

Since the present owner came into possession, the stable manure and all the animal excrements produced on the premises, and especially the urine, have been collected with the greatest care, and of course have been incorporated with the soil. This piece of land acted as an actual condensor of carbon and nitrogen in the vegetation it produced, and I consider myself perfectly authorized in concluding, from my experiments, that, in ordinary farm management, presupposed that the composition and character of the soil is right, such a quantity of ammonia will gradually accumulate in the soil as, considered in relation to the previously present soil-ingredients, will be more than sufficient to give them their maximum of efficacy. This does not of course imply that by further addition of mineral and atmospheric plant-food, a far greater yield may not be obtained.

My experiments, which occasioned me an outlay of 8,000 florins, ($3, 200, the difference between the entire expenditure and the sale-price,) show indeed that to make a soil fertile which is barren from want of active (soluble) ingredients, and not on account of its unfavorable physical condition, requires an outlay greater than the purchase of the most fruitful soil; but in this I was in no way disappointed. What I wished to arrive at was well worth the sacrifice. What I have arrived at, is the firm conviction that the time must come when agriculture will be carried on, as an art, according to scientific principles, and not according to mere recipes.

Guano.

A gentleman of Wilmington, Delaware, has given us the following account of the use of guano, under his own direction, as well as the experience of others, in the State of Delaware, which will be valuable to those who are desirous of experimenting with this fertilizer. No experiments can be satisfactory but those made with the *genuine* Guano. The gentlemen in Delaware are particular in securing the true article, and reliance therefore is to be placed upon their statements.

"I have postponed answering your queries with regard to guano, in order to submit them to some of the best farmers of this neighborhood, whom I was to meet yesterday. The general result of their answers is that the effect of guano is in inverse ratio to the richness of the soil. On the rich farms of Chester county, Pennsylvania, guano has not been much tried, as they have no need of it, and when tried, gave unsatisfactory results. On the contrary, on the naturally fertile land, but exhausted by injudicious cultivation, of our lower counties, it has produced very good and durable effects. Mr. Bryan Jackson, an intelligent agriculturist and practical farmer, informs me that an application of 300 pounds guano per acre produced on his place a crop of wheat equal to the one grown on the same land with seventeen cart loads of barn yard manure. He had the ground plowed deep previously to spreading the guano, and had it covered by another shallow plowing. He states that he obtained no results of guano for oats or barley. However one of my neighbors gets good crops of oats on poor land in which he plows guano. I was also informed that a crop of corn of 70 bushels to the acre had been obtained on poor land from a mixture of guano and plaster, at the rate of a handful in each hill, put in before dropping the seed. This is only an hearsay. My own experience with this manure dates from ten or eleven years ago, when I tried it for wheat with very good results, and I obtained the best wheat where the most guano had been laid on. The next year, having a new grass field that had given a very short crop at the first cutting, I applied on twelve acres of it a top-dressing of one ton of Ichaboe guano, mixed with equal bulk of plaster. The result was, for the following year, a crop of upwards of two tons of hay to the acre on the twelve acres which had been top dressed, while it was quite light on the part that had received nothing. Having top dressed the remainder of the field in the same way, it became quite equal to the first part. I have had that field mowed or pastured six years before it was necessary to plow it again. Since then I am so satisfied with this fertilizer's efficacy that I do not experiment upon it. I use it in conjunction with stable manure, plowing it down, except for rutabaga and other turnips, for which I cover it with a slight harrowing, and also for top-dressing wheat stubble at the rate of 300 pounds per acre mixed with equal bulk of plaster. For this operation I wait rainy weather, in order to have the guano immediately washed in the ground. It is, however, desirable to have it performed early, in order to let the clover and other grass get strong enough to withstand the pernicious influence of winter.

"On the whole I think guano in most invaluable on exhausted soils to produce straw, fodders, &c., or to enable the farmer to increase his manure, but that when applied exclusively to the production of grain, without combining with it stable manure or green crops, as I believe is done in some parts of the country, it will utimately *leave the lands in a worse state of exhaustion than ever.*

"The hay crop here will be short. The severity of last winter: after, the drouth of the autumn, has been very hard on it, and the spring rains have come too late to restore it. Wheat has been much winter killed, but has improved in the spring."—*Journal N. Y. State Ag. Society.*

Packing Buds and Grafts.

We have on former occasions given directions on this subject, but have observed among the packages of grafts occasionly received, indications that the best modes are not well understood, even by some intelligent cultivators of fine fruit, by whom errors are often committed.

Since the reduction of postage, the transmission of buds

and grafts by mail has become a great convenience to fruit raisers and pomologists, and the only difficulty is to put them up so that they shall carry long distances with safety. The essential requisites, are to secure the moisture they contain from evaporation, and to prevent bruising.

To prevent evaporation, it was formerly the custom to encase them in muslin covered with a coating of grafting wax; but this was found inconvenient to apply and troublesome in removal. The writer therefore introduced an improvement some fifteen years since, which has since been generally adopted throughout the country. This is to wrap the grafts in *oil-silk*, selecting a piece large enough to cover them and to bend it up over the ends, so as to bring it down *air-tight* on every part, by winding a fine thread around it at very short intervals from end to end. This forms a complete air-tight case, through which the moisture from the graft or buds cannot escape; and if well put up, *grafts* may be sent in this way across the Atlantic without the slightest risk. Buds in summer, being greener and more succulent, and the temperature being warmer, cannot be forwarded to such great distances. Peach buds, and other kinds cut before the wood is well ripened and hardened, should not remain in this condition longer than three or four days; but well ripened shoots of the pear and apple, near the close of the season of growth, will continue uninjured for at least a fortnight.

To prevent bruising during the period of conveyance, cotton batting, or several thicknesses of soft paper, should be placed *outside* the oil-silk wrapper. A pomological friend, to whom we gave instructions some years since in sending grafts, took the especial precaution of applying a coating of cotton batting *first* to the grafts, and then encased them in oil-cloth. The consequence was that the dry cotton in immediate contact, absorbed the moisture from the grafts, and on their arrival they were found as dry as if exposed to a summer sun. In another instance, several thicknesses of soft paper were used for a similar purpose, and with a like result. For this reason, even the strip of paper containing the name, should be as small as possible; and it is still better to write it with a finely pointed soft pencil on a shaved portion of the scion—or to cut notches as reference-numbers.

When large quantities of scions are sent by "Express," a different mode of packing is to be adopted. We have sometimes received them withered and dried, without anything to preserve their moisture; and in one instance a bundle of grafts was sent *with the leaves left on to keep them moist*, but instead of producing this result, the leaves had operated as evaporators (as they always do,) and had pumped all the moisture out of the grafts, through the leaf-stalks, and they were thoroughly seasoned when they came to hand. The leaves should always be removed, and the grafts packed in alternate layers with fine damp moss, and with a good moss-coating outside. Damp sawdust is a good substitute for moss, for packages of moderate size. The packing should not be *wet*, as in this case it will cause the scions to become water-soaked and tend to induce decay. Buds at mid-summer may be put up in this way, and will keep without injury from three days to a week or more according to the degree of maturity which the wood has obtained.—*Country Gentleman.*

Col. Morris's Short Horns.

We desire to correct a statement that has been published in the papers, that several of this fine herd of imported cattle had been stolen and butchered. The report originated from the loss of some fine cattle belonging to another gentleman of the same name, residing in the same town. We were at Fordham on our way to the trial of Mowers at Bedford, and saw the whole of the herd, and the animals were never in finer health and condition than they are at present. "The Duke of Gloster" is in prime order, and "Duchess 66th" and "Bloom" are in capital condition. The Duchess, served by Duke of Gloster, will drop her calf in July.—*Journal N. Y. State Ag. Society.*

Mr. Smith Lounges on the Sofa.

And Mrs. Smith Lectures him for it.

[There is a touch of practical good sense about the following that will be appreciated by thousands. We find it it in the *Marysville Tribune*:]

"I declare, Mr. Smith! this is too bad. Here you are stretched out on the sofa, mussing it up, and my nice carpet is all spoiled by the tramp of your coarse boots. I shall be ashamed to bring any one into the parlor again—and I have taken so much pains to keep everything nice! I do think, Mr. Smith, you are the most thoughtless man I ever did see—you don't appear to care how much trouble you give me. If I had no more care than you have we would soon have a nice looking house—it would not be long till our new house and furniture would be just as bad as the old," said John Smith's wife to him, as she saw him in the parlor taking a nap on the sofa.

Mr. Smith rose up slowly, and answered, "I was tired and sleepy, Mary, and the weather so hot, and this room so quiet and cool, and the sofa looked so inviting, that I could not resist the temptation to snooze a little. I thought when we were building a new house, and furnishing it thus, that we were doing it because the old house and furniture were not so comfortable and desirable, and that I and my own dear Mary, would indulge ourselves in a little quiet leisure in these nice rooms, and if we chose, in lounging on the sofas and rocking in these cushioned arm chairs, away from the noise of the family, and the smell of the cooking stove.

"I did not dream of displeasing you, Mary, and I thought it would give you pleasure to see me enjoying a nap on the sofa, this warm afternoon. I notice when Merchant Swell, or Col. Bigman, and their families are here, you appear delighted to have sofas, and cushioned arm chairs for them to sit in or lounge upon. I thought the house and the sofas were to use—that we were seeking our own pleasure when we paid a large sum of money for them; but I suppose I was mistaken, and that the house and furniture are for strangers, and that we are to sit in the old kitchen, and if I want to take a nap, or rest a little when fatigued, I am to lie down on a slab in the wood house; and if you want to rest, can go to the children's trundle bed, in the little close bed room where the flies can have a chance at you."

The irony of Mr. Smith's reply only provoked his wife, and seeing himself threatened with a repetition of Mrs. Smith's speech, with unpleasant additions and variations, and knowing that he would get tired of gaining victories over her in argument, before she would think of getting tired of defeat, he took himself out, and left Mrs. Smith to fix up and dust out, and lock him out of his own house, and took a seat on an old chair in the kitchen, which Mrs. Smith said was good enough to use every day—in the kitchen where no one sees it.

Poor mistaken Mrs. Smith, thought I. And yet most women are like her. They want a fine house, and when they get it they want an out house built to live in, and they confine their families to a few small rooms, poorly furnished, while the main room, well furnished, is never seen by the family only when visitors come! Both house and furniture

are too grand for use. The carpet is too fine for their husbands to walk on—the mirrors are too fine for him to look into—the furniture is all too fine for him to see or use.—Just so it goes—we dress, we women, I mean, and I am sorry that many men are as foolish as we are, to please others, or rather to excite their remarks—we build houses, and furnish them for those outside of the family, and live as poorly when we are rich as we did when we were poor; as poorly in the new house as in the old.

It is a fatal day to enjoyment when a family gets a house and furniture too fine for use; and yet most woman have an ambition to have it so. Better would it be if they were contented with such a house and such furniture as is suited to every day use—the house large enough to accommodate one's friends, and the furniture such as all use when at home.

ROSE RANDOM.

Wheat Growing.

Pennsylvania contains some of the largest wheat growing districts in the Union. The aggregates of the following counties, as stated in the census of 1850, are unequalled by anything at the West or South, viz:—Lancaster, 1,365,111; Franklin, 837,062; Westmoreland, 668,476. The largest wheat growing counties of Ohio are thus reported in the census:—Stark, 598,594; Wayne, 571,377; Coshocton, 416,-918; Muskingum, 415,847; Seneca, 474,737. Lancaster, Pa., it will be perceived is one of the chief agricultural wonders of the country, and the Ohio districts are far inferior to the production of ours, of which the following are those lying along the routes of our various railways:—Lancaster, 1,365.111 bushels; Franklin, 837,062; Berks, 577,668; Chester, 547,498; Cumberland, 487,182; Bucks, 403,969; York, 578,828; Centre, 433,612; Union, 353, 095; Huntingdon, 365,278; Mifflin, 305,994; Montgomery, 309,255; Dauphin, 309,879; Adams, 318,842. This is exclusive of Western Pennsylvania, whose chief wheat counties are stated thus: Allegheny, 526,856 bushels; Fayette, 304, 102; Washington, 558,182; Westmoreland, 668,479. Of these Allegheny, Westmoreland and Washington are of course our tributaries, but Fayette can only be made to continue so by the construction of the Uniontown branch railway, as the Connellsville road, leading to Baltimore, passes through the county. Of the chief wheat counties in Ohio which we have named above, Stark and Wayne are along the Ohio and Pennsylvania railway, and Coshocton and Muskingum along the Steubenville and Indiana road.—*North American.*

Mulching.

Newly set trees should not be drenched in floods of water. In order to have a tree live, and the same is true of many garden plants, the ground should be moist, but not inundated. Mulching—a covering about the roots, of half rotted leaves, decaying chips, saw dust, straw, coarse hay, breaks, ferns, anything that will keep the surface moist and cool, is what the newly set tree requires. The mulching should be kept on till the roots have had time to heal, the rootlets to spread widely in the soil, and the tree to become vigorous, all which will be shown by its growth and full, rich foliage.—*Nash's Farmer.*

To Fatten Fowls.

The best food for fattening fowls is potatoes mixed with meal. Boil the potatoes and mash them fine while they are hot, and mix the meal with them just before it is presented. They fatten on this diet in less than half the time ordinarily required to bring them to the same condition of excellence on corn or even meal.—*Exchange.*

Col. Sherwood's Sale of Short-Horns.

The following is the list of prices and purchasers of animals, at the above sale on the 20th of June.

BULLS.

1. Third Duke of Cambridge (5941)—not sold.
2. La Fayette, red, calved June 5th, 1852, got by Vane Tempest (10, 469), to Mr. Osborn, of Sandusky, Ohio. $350
3. Powhattan, roan, calved September 20, 1852, got by Vane Tempest (10,469), to Mr. Taylor, of Ontario Co., N. Y. $120
4. Novelty, white, calved Nov., 24, 1852—not sold.
5. Pope, red, Jan. 24, 1853, by Earl Seaham (10,181), to S. B. Payne, Geddes, N. Y. $415
6. Young Cambridge, red, March, 4, 1853, by 3d Duke of Cambridge (5941), to Edw. Jones, Stamford Canada West.... ..... $500
7. Waterloo, red, July, 1851, by same as No. 2, to Mr. Butler, Seneca Co., N. Y. $135
8. Chatauque Chief, roan, August, 1854, by imported Harrold 2d, to Mr. Birdseye, Onondago Co., N. Y. $55
9. Prince Albert, red, April 26, 1855, by Earl Vave, to Mr. Ashton, Galt, Canada West $75
10. Red Jacket, Nov. 3, 1853 by 3d Duke of Cambridge (5941), to J. W. Wilkin, Orange Co., N. Y. $500
11. Shenandoah, Dec., 27, 1853, by the same as No. 10, to Ralkerell & Robison, of London, C. W. $500

COWS.

1. Red Rose, 2d imported, bred by Mr. J. Stephenson of Durham Eng.. red, Nov. 1846, by Napier (6238), to Ambrose Stevens, ... $300
2. Red Rose 4th, same breeder as last red, October 22, 1849, by Earle Chatham (10176), to Mr. Ashton, Galt C .W $925
3. Red Rose 5th, red, by 3d Duke of Cambridge (5941), to B. & S. Haines, Elizabethtown N. J. $600
4. Red Rose 7th, red, October 1852, by same as No. 3, to Mr. Ashton $620
5. Red Rose 8th, roan July 24, 1854, by same as No. 3. to Mr. Osborn, of Sandusky Ohio $250
6. Red Rose 9th, red, January 26, 1855, by same as No. 3 to Thomas Gould, Aurora, N. Y., (re-sold to J. W. Wilkin, Orange Co., N. Y.) $350
7. Lady Sale 2d, roan, bred by same as No. 1, got by Earl Chatham (10176). to Mr. Ashton $610
8. Lady Sale 4th, white, Nov. 20, by same as No. 3. to J. R. Page, Sennett, N. Y. $400
9. Lady Polky 2d, roan, April 9, 1853, by Vane Tempest (10469), to J. W. Wilkin, Orange Co., N. Y. $410
10. Phantom 3d, roan, April 24, 1853, by same as No. 9, to J. W. Wilkin $460
11. Lady Brown, roan, 3 years old, by Gen. Hasley, to Mr. Osborn $200
12. Style, roan, by young Waterloo (2817) to Mr. Osborn. $220
13. Lady, red, Dec. 1851, by imported Windle (5667) to Mr. Osborn $310
14. Flower, Aug. 18, 1853, by imported Woolviston, to Mr. Osborn $260
15. Pink, Aug. 31, 1854, by Woolviston, sick unsold.
16. Red Rose, 10th, May 30, 1855, by same as No. 3, to Mr. Ashton $350

Nine bulls sold for $2,650
Average per head $294,44
Fifteen cows sold for $5,225
Average per head $417,00

Total—24 Animals sold for $8,905
Average per head 371 04

Preserving Fruits.

The following article, which we copy from Arthur's Home Magazine, was intended only to refer to "Arthur's Self Sealing Cans and Jars," and as it contains some useful hints we transfer it to our pages, with the remark that the directions are applicable to preserving fruit in glass bottles or any other perfectly air excluding vessels, when perfectly sealed. Glass bottles with wide mouths are made for the purpose, and may be had at low rates at the agency of the glass works:—"Arthur's Self-Sealing Cans and Jars are made with a channel around the mouth, into which a cover fits loosely. Into this channel a very adhesive cement is poured and allowed to harden. Thus prepared for sealing, the cans and jars are sold, and the housekeeper, after filling her vessels and applying the heat, has only to warm the cover and press it down into the cement, when the work of sealing is done. These vessels can be used year after year, and, as the cover goes over the whole top, may be as perfectly cleansed as any other open vessel.

As the fruit season has now commenced, housekeepers should by all means try some of these cans, and prove them to their own satisfaction: At small cost and trouble they may now have fresh or stewed fruits or tomatoes on their tables all next winter, and at summer prices. The method of putting up fruits in this way, we will briefly give:

Fill the can or jar with ripe fruit, adding a little sugar, simply enough to render the fruit palatable, and set in a vessel of water, (warm or cold.) Let the water boil, and continue boiling until the fruit is well heated through—say for half an hour. Directions have been given simply to let the water boil, but such direction is defective, as at this time the fruit in the centre of the vessel will be scarcely warmed. Should the vessel be then sealed, fermentation will take place. The heat must thoroughly penetrate the contents of the vessel. As soon as the fruit is sufficiently heated, warm the cover, press it into its place, and the work is done.

Another way is to make a syrup of two pounds of sugar for every six pounds of fruit, using half a pint of water for every pound of sugar. Skim the syrup as soon as it boils, and then put in your fruit and let it boil ten minutes. Fill the cans or jars, and seal up hot. Some make a syrup of half a pound of sugar to every pound of fruit—and some only use a quarter of a pound of sugar to a pound of fruit—while some use no sugar at all.

To keep peaches, pare and cut them up. If thrown into cold water they will retain their firmness and color. Heat them in the cans or jars as above—or boil them ten minutes in a syrup. In this way, strawberries, raspberries, cherries, plums, peaches, &c., &c., may be kept for any length of time in the same condition that they were when sealed up, and with the flavor unchanged. For small fruit it is best to make a syrup without water, and boil the fruit in it for only a few minutes.

Fresh stewed fruits of all kinds may be kept in these vessels. It will only be necessary to stew the fruit for the table, adding the amount of sugar required to make it palatable; fill up the vessel with the hot fruit, and seal at once. All ripe fruit preserved in this way will be found as fresh in the winter season as if just taken from the tree and stewed.

Tomatoes.—Take off the skin; put them in a preserving kettle or other convenient vessel, and boil them for a quarter of an hour. Fill the cans or jars, and seal them up hot.

Culture of Strawberries.

The New York Horticultural Society, at a recent conversational meeting, arrived at the following conclusions in regard to the best method of cultivating strawberries:

The best soil for the strawberry was stated to be a gravelly loam. The land should be well drained, and to every acre apply twenty bushels of unleached ashes, ten bushels of lime, and two or three pounds of salt. The ground should be well broken up, animal manures should be eschewed; leaf is the best, and this should be carefully spaded in. About the first of July is the best time to set out the plants. In doing this, pains should be taken to have them firmly rooted. The roots should be eighteen inches apart.

Sometimes it will be well to allow greater interval, in which case the interstices can be filled up from the growth of the runners. After setting out the plants, throw on a covering of tan bark an inch or an inch and a half in depth, then water them plentifully, and the moisture will be retained a long time. After cold weather comes on, cover the strawberry beds and the walks with clean straw, throwing over a little brush, or something to keep the straw in its place. In the spring remove the straw and make use of some fertilizing agent to give the plants vigor, as sulphate of soda, sulphate of ammonia, or nitrate of potash. Keep the roots out, see that the plants are bountifully watered, and let nothing intervene to disturb or retard their growth till you gather the fruit. The beds should be made over as often as every three years.

The Olive Tree in the South.

R. Chisolm has written a letter to the Charleston Mercury (S. C.,) in which he states that he has cultivated two kinds of the olive for ten years, and that its fruit ripens fully in the low countries of the South. He has now three hundred trees under cultivation, but he believes that it cannot be cultivated at present for the sake of its oil, as cotton is a more profitable crop.—*Scientific American.*

The California Pine.

R. Lawson of Edingburgh, Scotland—a distinguished forester—says of the California pine (P. insignis); "this beautiful tree soon towers above those which have been planted many years before, and when the forests of California supply us with its cones on more moderate terms, it will probably become the staple pine of our forests."—*Scientific American.*

I. J. Mechi's Annual Meeting of Agriculturists,

At Tiptree Hall, Kelvedon, Essex, takes place on the 28th of July, instant.—We have received an invitation to attend; and also invitations for gentlemen who may visit England. If any of our friends should be visiting England, and desire to attend this interesting meeting, if they will address us, we will furnish them with the necessary papers.—*Journal N. Y. State Ag. Society.*

Imported Cattle.

Hon. Charles Huffnagle, M. D., the American Consul to Calcutta, India, has imported several fine cattle and some Shetland ponies, which are now grazing on a farm near New Hope, Pa. Several more are on the way and expected to arrive daily. He is also expecting a fine pair of Arabian horses by the next arrival, his object being the improvement of the herd of cattle and horses in this country.—*Exchange.*

Cabbages for Cows.

The editor of the Agricultural Gazette (Eng.) estimates one acre of cabbages to be worth three acres of turnips for cows. He recommends sowing seed in beds, either in autumn or spring, and transplanting towards the end of May at the rate of 8,000 plants to the acre. One pound of seed will produce about 2,400 plants.

Compost Heaps.

[CONTINUED FROM PAGE 164.]

VEGETABLE STRUCTURES.—The earth is a great storehouse, constantly producing vegetable substances, which, by undergoing various transformations, are rendered capable when returned to the soil, of conferring greater fertility than that of which their growth deprived it. Every farm, to a greater or less extent, according to the richness of its soil, produces neglected vegetable structures. All of these contain a large amount of carbon, principally collected from the atmosphere; but if they are allowed to die and rot on the surface, this carbon is not preserved in the soil to promote the growth of other plants, but, to a great extent, is lost to the farmer by dissipation into the atmosphere. On the other hand, if such plants are carefully collected together, and moderately fermented along with substances calculated to absorb the gases liberated during fermentation, they become really and truly potent fertilisers. All kinds of grasses, ferns, nettles, hedge-twigs, leaves, or other herbs, either gathered in fields and plantations, or removed as refuse matter from cattle stalls, are of great value to the agriculturist as manures. They ought to be gathered together carefully, and nothing will pay better than the labour bestowed in so doing. There are several ways in which such substances may be prepared for use in the field. The most simple, and perhaps the most profitable method is the following:—In the summer months, from the time the herbage is rank enough to be worth collecting, it should be gathered together and laid down somewhere convenient to the manure-yard of the farm. A receptacle should be in readiness, say six feet wide, two to three feet deep, and a greater or less length, according to the quantity of matter to be prepared in it. This pit may simply be dug out of the soil of a field, or a vacant piece of ground, for the time being. Into the bottom a layer of all the various kinds of herbage mixed together, say twelve or fifteen inches thick, may now be put; over it should next be spread of layer of well-broken dried peat, about six inches thick. As the herbage will be lying loose, a good deal of peat will find its way downwards and be mixed with it; but the six inches should be irrespective of this. A layer of lime-shells, from four to six inches thick, should then be added, and covered over with a six inch coating of peat. Then comes another layer of green herbage, from one to two feet thick, according to circumstances; a layer of peat, lime, peat herbage, and so on alternately, till the heap is the height which may be wished. It should be completed in the form of a potato-pit; and to prevent the loss of gaseous substances, liberated during fermentation, it must be covered over with four or five inches of soil, or earthy matter. In a few days, fermentation will be in full action, and it will now become necessary to guard against the compound being made too dry by the fermenting process, or what is termed "fire-fanged." Of this there is comparatively little danger, if the moss be close enough to, or mixed sufficiently with the lime, for it will require all the heat evolved by the latter to promote fermentation in the former. After a few weeks, as will be indicated by the partial falling-in of the heap, or may be ascertained by examination, the contents will need to be turned. Of course, if the fermentation is very intense, it will be necessary to turn sooner, and by mixing the substances together, gradually lay the heat. After the mass has lain for a month or two it may be turned again; and this time it should be well drenched with urine, or other liquid manure from the tanks. The quantity of caustic lime present will not be sufficient to dissipate ammonia of the urine; but even should it do this, the earth and moss will absorb it. Nay, the presence of lime, if not in too large quantity, will be of great advantage in producing a nitrate of lime. As the ammonia of the urine and nitrogen of the peat become oxidised by the oxygen of the liberated carbonic acid of the vegetable structures, and form nitric acid, lime, if present, becomes the base of a nitrate. For the production of a nitrate of soda, it will also be found of advantage to strew a quantity of chloride of sodium (common salt) over each layer, as the heap is being formed. As the compound is turned over, and the salt comes into contact with the lime, soluble chloride of calcium is formed. Then, as the nitrogen of the moss, and ammonia of the urine, are brought within the reach of the soda, the soluble nitrate of soda is produced.

Thus, then, almost no loss, but a certain profit, will follow the application of urine, or other tank liquid, to such composts. After the first turning of the heap, a fresh covering of soil should be laid over the surface, to prevent escape of any of the gases which are being produced in the process of decomposition. When the compound has lain in this state for a month or so, and has received several dressings of liquid manure, it may be turned for the last time. During this operation, if the contents seem to be less moist than could be wished, a moderate dressing of tank liquid should again be applied. In this state, the compost may either be used immediately, or at the distance of many months, as may seem advisable. When the ammoniacal liquor of gas-works can be obtained, it may be moderately used instead of liquid manure. In either case the action is the same, if the mixture is properly prepared. By the formation of composts of this nature, a large quantity of valuable manure may be made during the year, even on the smallest farms.

True, the operation involves a good deal of labour and attention; but if these diminish the annual outlay for foreign manures, they will be amply remunerated. Nothing is got without either money or work; and if it is possible to prepare home-manures without a serious loss of labour, the convenience afforded by their being at hand ready for use will, in many cases, render them cheaper than distant fertilisers, though obtained at almost any price. But how little labour does the preparation of compost heaps really give to the farmer in many cases? In no department of farm work are the advantages of good management more strikingly apparent than in the accumulating and preparing of composts. A farmer or overseer destitute of method, who never knows the next work to set his men to till they come a quarter of a mile to ask his bidding, or who has men often doing work out of season, or which might have been as well undone, is not likely to have many compost-heaps. By mismanagement he squanders more of his own and his servants' time, than would be necessary to

plan a suitable line of action, and set his men to work in the gathering together of materials. On the other hand, the man who has method and energy both in planning farm-work and getting it performed, seizes every spare hour and minute to accomplish the end he has in view. The work is laid out systematically for each man, and if it is completed before the hour of cessation from labour, and should he have a cart with him, he must fill it with some sort of road scrapings, or earth, and bring it to the compost heap; or, if he have only a spade, he must gather a heap or two of such substances together, wherever he can get them. Far better, surely, to do this, than to have men wandering several field's-breadth to ask more work; or, just as bad, making the work serve the time at their command, in case they have to do so.

Then, again, in wet days, when a bad manager allows his men to loiter away within doors the short intervals between showers, the person who knows the value of time and the best means of improving it has them at work whenever it is dry over-head. It will even generally pay to have a sort of temporary shed roof over the compost repository, so that the turning and forming of the heaps may progress when nothing else can be done out of doors. By good management, then, it is quite possible to save the time necessary for the preparation of composts from the rainy days and too often wasted hours of the year, and at its termination even the keenest compost-maker will often be surprised at the amount of his accumulations. Referring more particularly to pleasure-grounds, plantations, and land generally occupied by proprietors, the quantity of vegetable matters which might be profitably collected during the summer and autumn months renders attention to this matter of very great pecuniary importance.

Defects in Stables.

Knowing that horses often suffer in ways that their masters do not even suspect. and that there must be many, both in city and country, among the readers of such a paper as this, who would at once take measures to prevent their horses from suffering, if only the sources or causes of that suffering were brought under their notice, we commenced in a former paper a brief series of articles intended to point out to *merciful men* a few of the more prominent of the sources of suffering and discomfort to their horses which a little thought or painstaking might readily abate or remove entirely.

In continuation of the subject of defects in stables we wish, at this time, to direct attention to one of very common occurrence and of very injurious consequences —*the want of sufficient ventilation.* It seems as if the bulk of those who construct stables, and of those who have the care of horses, were of the opinion that good, pure, fresh air is of no great use to a horse; and that if horses only get plenty to eat and drink, and have not too much to do, they must of necessity do very well. They seem to be utterly ignorant of the well-established fact, that for the maintenance of health and of life a plentiful supply of fresh air is absolutely essential. It must surely be from this ignorance, and not from hard-hearted indifference to the comfort of their animals, that so many shut them up in close stables, the atmosphere of which, when the door is first opened in the morning, is exceedingly offensive to the nose, pungent to the eyes, and of most disgreeable respiration.

Whenever a disagreeable smell meets one when he throws open a stable door, especially at the first opening of the door in the morning, that stable is certainly defective in its construction and unhealthy in its influences. A horse breathing such an atmosphere during the whole of a long night can not be as strong, lively, and vigorous as if his lungs has been supplied with purer air. The whole of the blood and humors of his system are more or less contaminated with a poisonous and debilitating material—a true *materies morbi.* Besides the ammoniacal and other foul gases from the droppings and urine, there is the effluvium arising from the insensible perspiration of the skin, and futhermore a quantity of carbonic acid gas generated by the lungs with each exhalation. No wonder that after spending the long nights of a whole winter in such an atmosphere, so many horses, and cattle also, should be found lanquid, lazy, loggy, and nearly useless in the spring—often at the very time when their utmost vigor and strength might be very profitably and acceptably employed.

But some do not escape with merely an impairment of their usual health and vigor in the season of spring. but are found to have weak or inflamed eyes, or to be easily attacked by colds, coughs, influenzas, and inflammations of the lungs. The breathing of foul and unwholesome air during the long winter nights debilitates the tone of the lungs and of the whole system, and when horses which have been subjected to such a contaminated atmosphere are exposed, as they must be, to the sudden changes of temperature and electrical conditions of the air in spring, they readily take colds and become victims of inflammation of the lungs.

Horses that are compelled to spend half or more of their time in an atmosphere saturated with ammoniacal and carbonic acid gases, in which a *man* could not breathe without painful discomfort *one half hour*, must (it requires nothing more than common sense to see that it must be so) always be in near proximity to, or on the borders of, disease, and on very small exposures must suffer from some attack more or less severe. If we recollect aright, Dr. Dadd has somewhere stated in his book, or in some contribution to the agricultural journals, that horses have *often* been found dead in their stalls from the effects of carbonized blood in a polluted atmosphere, and that many more would probably die were they not permitted to take a little of the breath of life through the day.

The subject will be continued in a future number.—Rural Resident.—*Life Illustrated.*

Profitable Culture.

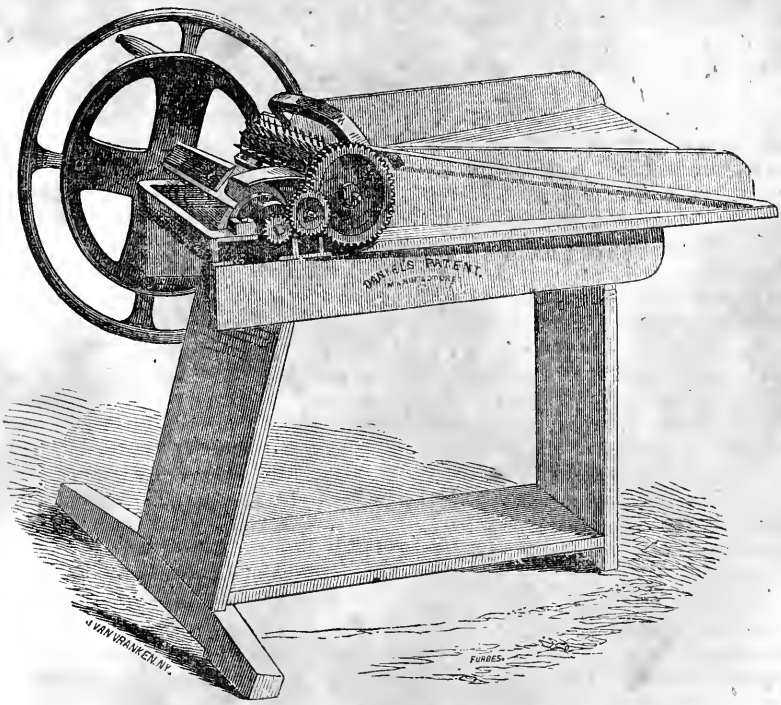
An industrious laborer, who cultivates with his own hands his own lands, has just informed me that he sold 125 barrels of onions, at $4,25 per barrel, delivered at his cellar. These onions grew on about two-thirds of an acre of ground.

Amount of sale	$531,25
Deduct cost of culture, &c	131,25
Nett profit	$400,00

—*N. E. Farmer.*

Allen's Mowing Machine.

Our Reporter expressed himself very sorry that in his report of the trial of mowers published in our last he over looked transcribing from his note book the operation of Allen's Mowing Machine, manufactured and entered by R. L. Allen of New York. The following is the report of that operation which should have been published in our last:—"The machine next entered was Allen's, wood frame with two sets of gears; weight about six hundred pounds, cutter two and three-quarters inches long, and vibrating with about the same speed as Ketchum's. Trial, *first cut*, cut well but carried the grass with it until quite a quantity had accumulated on the guard bar; then cut rather long until the accumulation of grass fell over back of the bar; then cut excellently again till the grass a second time accumulated; then cleared itself as before and got to the end of the field before a third accumulation was large enough to cause a third interruption. The framework and gearing of this machine seemed to us to be in design the best on the field. There is but little probability of the driver being tired; and (such is the excellent manner in which the gears are arranged and covered) no possibility of his being hurt. We confess we expected to see this mower work the best of any on the grounds; and think that our disappointment must have been caused by some unseen imperfection in the work by the manufacturer taken in connection with a want of knowledge of the *operation* of a mowing machine evinced by the exhibitors.



DANIEL'S HAY AND FODDER CUTTER.

The above cut gives a fair representation, of a hay, straw and fodder cutter, patented in 1850 and 1853, but not much known in Pennsylvania, previous to last season. We have heard those who have used them in this vicinity speak of them in the highest terms, as equally adapted for hay, straw and corn fodder, cutting with great rapidity, being strongly made, and simple in arrangement.

All our information goes to prove a decided deficiency in the hay crop, at least in the eastern section of Pennsylvania. *New hay* has recently been selling in Philadelphia at $22 per ton, and last year's crop at $28. Under such circumstances, economy is a matter of necessity, and in respect to a saving between feeding it whole, and cutting, we known of but one opinion where any fair experiment has been made. A multitude of certificates as to the advantages of cut hay and straw can be obtained both in the United States and England, from the most practical and experienced farmers.

The question of which is the best cutter, has been almost as difficult to answer, as which is the best Reaping and Mowing machine, which the best Bee Hive, or the best Cooking Stove. The inventive genius of the country, has been fully turned to these different matters as is evidenced by the great accumulation of patents. We know of many farmers, who have tried Daniel's Hay Cutter, and consider it *the cutter*. Their construction is such, that they sharpen themselves, by turning the set screws, and pressing the stationary blade slightly against the revolving blades. If to the edges of the revoling blades a small quantity of oil and emory is applied, and the motion of the cylinder reversed, until the knives wear themselves sharp the machine is put in perfect cutting order. The feed roller is of the most complete

character, performing its office in the most effective manner.

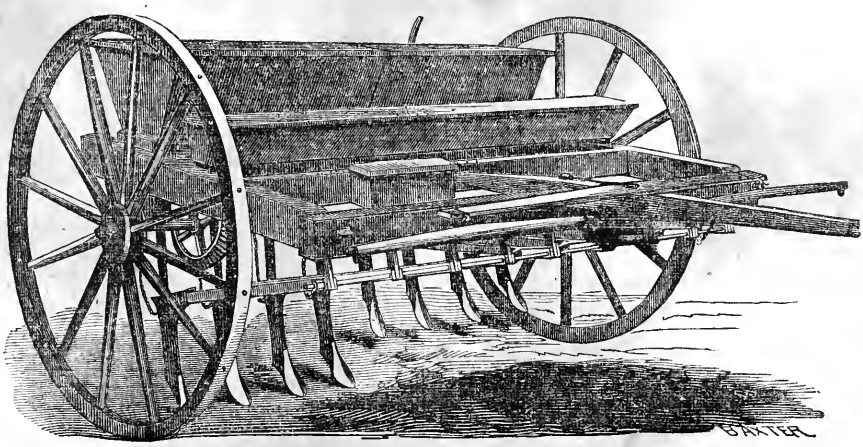
These cutters are built of two sizes, No. 1, being designed for hand power, but may be used with horse power, and is arranged to cut either one inch or half an inch in length, as may be desired, by a change of gears. The blades are ten inches in length.

No. 2, has sixteen inch blades, and designed for horse power, but may be used with hand power. It is so arranged as to cut (by change of gear,) either one half inch, one inch, or one or half inches in length as may be desired. When propelled by a single horse power, and properly fed, it is capable of cutting a ton of hay one inch long in one hour. This seems extravagent, but the machine will do it with ease if properly managed. The price of No. 1, is $25, and of No. 2, $50.

Messrs. Paschall Morris & Co. of Philadelphia are the Agents for the above machine.

PENNOCK'S IMPROVED DRILL.

On page 230 of the present number, we spoke of drilling wheat and of Pennock's Improved Drill. After that part of the Journal had been stereotyped, we received from the Messrs. Pennocks the annexed cut of their Drill and Seed Sower.



STEACY'S PATENT GRAIN DRILL.

Messrs. Landreth & Son have kindly furnished us with the above cut and the following description:

The above Drill was first exhibited at the State Fair held at Powelton October 1855, and attracted considerable attention. It differs in many respects from the generality of drills. The dropping of the grain is performed by means of an iron slide, with square holes, running horizontally the whole breadth of the machine, *under* the seed boxes. The square holes in this slide carry the grain from the seed boxes and drop it in the boot. A small brush in the box at the side of each aperture strikes off the overplues grain without bruising it. Compartments in the boxes keep the grain confined to each drill hole, thus dropping with the same regularity upon hillside as upon level land. The slide is worked by a rod connecting with a pinion wheel. A *marked slide* on this pinion gives the rod more or less eccentric motion, thus giving to the *slide under the seed boxes*, a long or short motion. By this means an exact measurement or guage of the grain takes place every revolution of pinion wheel, a *cog* wheel *on the axle* works the pinion.

A very simple contrivance for sowing oats has lately been added and works admirably. The grass seed sown is a very simple and novel arrangement and does its work with rare accuracy. A Land measurer is also attached.

The whole arrangement of the drill is simple in the extreme. In Lancaster and other Counties in this State, where it has been used, it has given universal satisfaction. David Landreth & Son 21 and 22 South Sixth street Philadelphia are the agents.

An Act

For the preservation of Insectivorous Birds, and for the protection of Fruits and Fruit Trees in certain counties.

SECTION 1. Be it enacted by the Senate and House of Representatives of the Commonwealth of Pennsylvania in General Assembly met, and it is hereby enacted by the authority of the same. That no person shall wilfully kill or destroy any insectivorous bird in the counties of Chester, Butler, Montgomery, Bedford, Blair, Lancaster, Westmoreland, Northumberland, Tioga, Bucks and Delaware, except Game, Crows, Black Birds or birds of prey nor enter upon any enclosed lands for the purpose of hunting with dogs, guns or otherwise without consent of the owner or occupier thereof, under a penalty of five dollars with costs of suit, for each and every offence, to be sued for and recovered before any magistrate one half for the use of the commonwealth, and one-half for the use of the common schools of the district.

SECTION 2. That wrongful taking and carrying away of fruit, vegetables, plants, fruit or ornamental trees, vines or shrubs, in the counties aforesaid whether attached to the soil or not shall be deemed and the same is hereby declared a misdemeanor and punishable as such in any amount not exceeding double the value of the property so taken nor less than one dollar, the penalty to be recovered with costs of suit and be disposed of as provided for in the preceding section.

SECTION 3. That any person or persons who shall wilfully or maliciously, in said counties enter or break down, through or over any orchard, garden or yard fence, hot bed or green house or who shall wilfully and maliciously club, stone, cut, bark, break or otherwise mutilate or damage any fruit or ornamental tree, shrub, bush, plant or vine, trellis arbour or hot bed, hot or green house or who shall willfully or maliciously trespass upon or walk over, beat down, or trample or in anywise injure any grain, grass, vine, vegetables or other growing crop, in the said counties, shall and may on the conviction thereof in action of trespass before any Burgess or Justice of the Peace or of any court of law in said counties, have judgment against him, her or them for any amount not less than five dollars nor more than double the amount of the damage proved to have been done. Whenever such damage shall exceed the said sum of five dollars with costs of suit to be recovered and applied as in the previous sections of this act, and the testimony of the informer or of the owner or occupier of the premises shall in all cases be admitted as evidence to establish the misdemeanor or trespass.

SECTION 4. That in default of the payment of the fines and penalties imposed by this Act, the acting magistrate may, and shall commit the party convicted to the jail of the proper county for not less than five, nor more than twenty days.

SECTION 5. That this act shall take effect from and after the first day of August next.

HENRY K. STRONG,
Speaker of the House of Representatives.
WILLIAM M. HIESTER.
Speaker of the Senate.

Approved the fourteenth day of April, Anno Domini One thousand eight hundred and fifty five.

JAMES POLLOCK.

The Fourth Duke of Athol.

Lewis Hoopes, of Chester County, has recently purchased of L. Spencer, West Chester New York, a very handsome Bull Calf which, by the right of descent bears the title of the fourth Duke of Athol." Mr. Spencer's stock is known to be among the most reliably "pure bred" Durhams in this country, and our Chester County friends are acting wisely by introducing it. Chester County already has within her borders some of the best Durhams to be found in this Commonwealth, and the recent introductions by Messrs. Brinton, Hoopes and others, show that the farmers there appreciate the value of "pure bred stock."

The following is the pedigree of the fourth Duke of Athol:—

Color red and white,—Calved February 18th 1855—Bred by L. Spencer, West Chester, New York.

Got by imported Dutchess Bull, Duke of Athol (10150). Dam Phœbe 3d, by Guanoney (68). G. Dam Phœbe 1st. (imported,) by Earl Spencer's Durham Bull. G. G. Dam by Young Commerick.

Cooper's Lime Spreader.

William Sharpless, of West Goshen, Chester County, requests us to state that he purchased one of Lewis Cooper's Lime Spreaders some eighteen months since, and after thorough trial is perfectly satisfied with its performance. When the lime is in proper condition for spreading—as it always should be—either by being judiciously slacked with water, or air-slacked under cover, our friend Sharpless says he can graduate his spreader so as to distribute with tolerable certainty any quantity, from ten to one hundred and fifty bushels per acre, and he can spread it almost as evenly over the ground as the drops of rain from a falling shower. Where lime has lain out through the winter and been converted into a *mortar-bed*, as is too frequently the case among farmers, the spreader will not perform so well as when the lime is in proper condition for spreading. It would be asking rather too much of any machinery to require it to exercise reasoning powers and adapt itself to every contingency a careless farmer may impose upon it.

Machine for Shearing Sheep.

The Michigan Farmer, says a machine has been invented by Palmer Lancaster, of Burr Oak, in that state, for shearing sheep, "that it works rapidly, cuts with eveness, never cuts the sheep, nor the wool twice in two."

One of the difficulties we should suppose, in a such a machine would be to induce the sheep to *hold still*, particularly if there was much whizzing of cog and fly wheels, turning of cranks &c.

The article does not state, whether the sheep is put into a hopper, and after a few revolutions, comes out *shomn*, whether it is operated by a crank or lever, horse or man power. There seems no limit to the inventive genius af the country, but we had not looked for such a machiue as the above, and feel incredulous till we hear more about it. We have seen an engraving of persons getting shaved by machinery in a barber shop, some fifteen or twenty at a time, and have also heard of a log

of wood, being thrown into a machine in some of the New England towns, and ready made buckets coming out at the other end. Such cases have been cited in proof that this is a great country. The sheep shearing machine, however appears to be a reality "as letters patent have been granted, and the inventor desires to sell rights." He hope he will come this way, as the old fashioned sheep shears is our only machine for taking the wool off sheep.

Farmers' High School---$1000 Subscriptions.

On another page, our readers will see the report of the committee, to establish the Farmers' High School of Pennsylvania. We think the trustees have acted wisely in deferring a final decision, of the location for a couple of months, till other sections than those now proposed, have had time to throw in proposals, and see what they can, do within their own limits. Believing that the establishment of this school, with the improved stock, implements, system of management, and numerous other incidental advantages which necessarly go with it, will increase the bona fide value of property in its vicinity, and be specially advantageous in a variety of ways to the county in which it is located we have been surprised at the apathy of the Farmers in Eastern Pennsylvania. Is there no public spirit in Chester, Lancaster, Delaware, Buck's, and Montgomery Counties? Are you going to allow the Pennsylvania Farm School, to be located west of the mountains, for want of a little effort. Land is of course higher here than in more remote places. The funds of the society will not enable it, to *purchase* a farm, erect buildings, stock, improve, and put it into successful operation by its own means, *unassisted.* If a suitable farm were offered to be donated, for the purpose in either of the counties we have named, we presume there would be a general acquiescence in its being located here, other advantages being equal. We hope at least an effort will be made, and as a beginning, we are authorized by a public spirited gentleman of this city, to subscribe one thousand dollars to establish the Farm School in either Delaware or Chester County. Now are there not nineteen other equally liberal gentleman to contribute a like amount. We can hardly doubt it, and the ball once started, we hope to receive similar offers, so as to give notice in our next number that twenty thousand dollars are subscribed. Please send on the names.

There are some sections we can name in these two counties, where land of the best quality, accessible by a railroad now constructing, and possessing all the advantages needed for the Farm School, can be bought *now* at quite a moderate rate. As it is proposed to locate it definitely in September, there is no time to lose. Will our friends assist us?

A Mammoth Cauliflower.

Our friend Dr. J. H. Bradford, of West Chester, has presented as with a Cauliflower of most magnificent proportions. The variety is the Early Asiatic, we believe, and measured thirty four inches in circumference, (around the head inside the leaves.) Upon discussing its merits at the dinner table we were not disappointed in the anticipations formed while measuring and admiring its proportions upon the table editorial; it was rich, luscious, and tender enough to win the admiration of a capacious, over-fed Alderman, of course, such a delicacy was not thrown away upon the more easily gratified alimentiveness of a hard working editor.

Dr. Bradford is one the most successful amateur gardeners around West Chester. His garden, together with the highly ornamented grounds about his residence, forms one of the most beautiful of the many much admired attractions of the Borough of West Chester.

We intended this for the last number but owing to its being sent with a deferred article, it met the same fate.

Mercer County.

We have a letter from S. Hoagland, Esq., corresponding secretary of the Mercer county Agricultural Society, enclosing a premium list for their approaching fall exhibition. The schedule embraces a wide range of articles calculated to excite competition, among the Farmers, Horticulturists, and Mechanics, also for articles of domestic manufacture. Mercer is one of our best counties and this is her fourth annual exhibition. Judge Waugh is to deliver the oration.

In reference to the crops in Mercer county, this season, our informant says:

The wheat crop of Mercer county is at this date about half harvested; it has received little or no damage from the yellow weevil or other insects. The yield both in quality and quantity surpasses that of many years previous. On a moderate calculation there was double the rye put out last fall that there was the year before, and the yield is bountiful; many stalks measuring seven feet six inches and over. Owing to many fine warm showers of rain for six weeks past, the oats and grass are big, almost beyond description. In short all kinds of vegetable crops promise bountifully, and our good pasture fields have caused our herds of Durhams and Devons to shed their old coats of hard times, (worn last spring and winter), and come forth in all the beauties that characterize the breeds. Judge Waugh of West Greenwich, has been invited to deliver our annual address. Yours truly, S. HOAGLAND.

Cor. Secretary of the Mercer Co. Ag. Society.

For the Farm Journal.

Colza or Rape Seed.

I have now gathered a crop of *Winter Rape* or *Colza*, amounting to about thirty two bushels per acre. The seed is of good quality. This, I believe, will, or ought to answer all inquiries or objections to the raising of it. Recollect, that this is raised in New Jersey, and that I firmly believe, that sixty to seventy bushels per acre can be raised:—mine, as observed in former communications, was sown under adverse circumstances, in new land, among stumps, &c. Any one wishing to engage in the cultivation of it, need not be apprehensive about the disposal of the crop. I wish to purchase any quantity that can be raised and pay two dollars to two dollars and a half per bushel for it in cash. Further information can be had of me, or of Mr. D. Landreth, 6th street, or Paschall Morris & Co. Philadelphia.

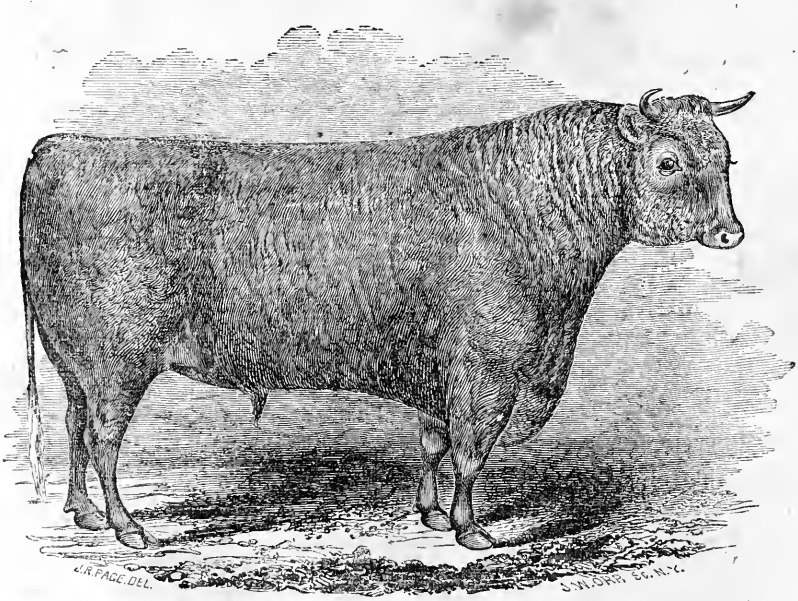
F. A. N.

NORTH DEVON BULL FRANK QUARTLY.

We present our readers with the following well executed engraving of the superior North Devon Bull, Frank Quartly, marked in Davy's Devon Herd book 205, imported and now owned by L. G. Morris, Mount Forham, New York. "Frank Quartly" gained the first prize at the New York State Agricultural show in 1853 as a two year old, ditto at the American Institute in 1853, also, the first prize at the New York State Show in 1854. He was calved in March 1851. His sire was Earl of Exeter (38), grandsire Baronet (6), dam Curly (96), by Favourite (43), grandam Pretty Maid (366), great grandam Curly, great, great grandam Old Curly. Curly and herdam were esteemed by Mr. Francis Quartly two of the best cows he ever bred. The Devon breed of cattle is well deserving of extensive introduction, and we are pleased that some of our prominent farmers in Pennsylvania, own animals of as pure blood and fine quality, as are to be found in the country. We hope to have an opportunity of seeing them, at some of our approaching exhibitions. For oxen, the Devon's are unrivalled, they are also fair milkers, and fatten kindly. Davy in his preface to the Herd book, (which by the way every breder of Devons should own a copy of), says as follows, in relation to breeding.

It certainly is advantageous to the purchaser of an animal (after he has made a selection), to be able to refer to the Herd Book, and see if his parents are good. We know that animals descended from well-bred parents are likely to produce more perfect offspring than others not so carefully bred.

The object of improved breeding is to diminish, or, if possible, to remove the defects of live stock, and to acquire and perpetuate desirable properties. The general art is to make such a selection of males and females as are most likely to promote the object; paying particular attention to a maxim which is too frequently forgotten—the governing law of the animal kingdom—that like produces like; that the good or bad properties of the parents are hereditary, and are almost invariably impar-



ted to their progeny. We know that some animals fatten faster than others, and that they are generally more handsomely formed. On handling them, we find the skin and parts beneath are soft and "mellow." This "*mellowness*" is a kind of softness and elasticity perceived upon pressing the skin, and is a very favorable sign of the aptitude of an animal to fatten. These parts are the cellular membranes, which in fat animals are full of fat; and store stock possessing this mellow feeling, denotes that there are plenty of membranous cells ready for the reception of fat. To breed cattle possessing this mellow feeling is an important object; for an animal is almost valueless though it be possessed of perfect symmetry, if it cannot be made fat without very extraordinary keep.

The object of a breeder should be to get as little bone as possible; large round leg bones indicate a coarse animal, whereas flat and small bones are symptoms of being well bred. It is highly desirable that there should not be excess in one part and a deficiency in another; but that an animal should lay on fat on every point in equal proportions, taking care to get as much as possible in those parts where it is most valuable: for instance it is of more value on the loins, ribs, and rumps, than on the neck or hocks; therefore, breadth of the loin, length of the rump, rotundity of frame, a good deep chest, and shoulders placed obliquely, that there may be no hollowness behind them, are indispensable qualities in a good formed animal; and I believe our best Devons possess these requirements in a greater degree than any other breed of cattle.

Dr. Anderson gives the following rhythmical enumeration of the qualities and shape of the cow:

She's long in her face, she's fine in her horn,
She'll quickly get fat without cake or corn;
She's clean in her jaws, she's full in her chine,
She's heavy in flank, and wide in her loin;

She's broad in her ribs, and long in her rump,
A straight and flat back, with never a hump;
She's wide in her hips, and calm in her eyes,
She's firm in her shoulders, and thin in her thighs;
She's light in her neck, and small in her tail,
She's wide in her breast, and good at the pail;
She's fine in her bone, and silky of skin,
She's a grazier's without, and a butcher's within.

Having been asked to speak of the color of the Devons, as some persons fancy those of a dark color are the best, and those of a light color in some way related to the South Hams breed of Devons, I can only repeat in answer to the latter supposition, a remark which fell from a friend of mine, namely: "That the North Devons differ from the South Hams beasts in almost everything which is necessary to constitute a good animal."

Many of the best Devons I ever saw were of a light color: this is the only respect in which they resemble the South Hams breed. The light-colored Devons are generally of "*the best quality;* i. e. they fatten quickest; although I think those of a darker red color the most hardy: the danger is, when they are too dark, the skin is frequently coarse and the hair wiry, consequently they are not of so rich quality. The best course to follow is the *via media,*—to get our cattle of a middle color, neither too dark nor too light; we then combine the hardy constitution of the former with the "high proof" of the latter. As to a little white about the udder, I cannot account for; and having been told by my father (who has bred Devons for fifty years) and others, that it cannot be accounted for, and knowing that some of the best and purest Devons that have ever been bred by all the breeders in the kingdom have had white about the udder, I should not refuse a *good* animal on that account; but the white must be confined to that part alone. Had I been writing for the use of breeders only, those remarks would have been unnecessary: in this case I do it for the benefit of those who are not so well acquainted with this valuable breed."

Smells Produced by Decaying Substances.

The most numerous class of disagreeable smells is that which is produced by the decay or decomposition of animal and vegetable substances. Our dislike of these smells arises partly no doubt from their being associated in our minds with unpleasant sights and ideas, and partly from their being found by experience to be injurious to human health.

The Putrefaction of Animal Bodies.—The general nature and odour of the ill-smelling substances produced during the putrefaction of animal bodies are determined by the sulphur and phosphorus which are contained in them. During their decay the sulphur combines with the constituents of the animal matter, and forms fetid compounds similar to those already described as occuring in the mineral and vegetable kingdoms. The phosphorus also enters into combinations scarcely less unpleasant and injurious. And with both of these classes of compound bodies are associated others peculiar to animal forms of matter, which have not yet been separately examined. All these unite in producing those mixed smells which distinguish so repulsively the natural decay of animal substances in the open air.

Of the presence of sulphur in such cases, a familiar example is presented by a rotten egg. When such an egg is broken, the smell of sulphuretted hydrogen is at once perceived, and a silver spoon put into it becomes black immediately from the action of sulphur. As the decay proceeds, other smells gradually become sensible, and these mingling with that of the sulphuretted hydrogen, occasion that growing offensiveness which the rotting egg is known to exhibit.

In warm climates, decomposition of this kind proceeds more rapidly, and the strong-smelling substances are produced both sooner and in greater abundance. The intensity of the odours emitted, and the distances to which they are diffused through the air in hot countries, may be inferred from the extremely short period of time required to bring the vulture and condor even from great distances. They scent afar off the decaying carcass, where the human organs refuse to give any indications of its presence.

Air, moisture, and a certain degree of warmth are necessary to the decay of animal bodies. If any of these three conditions be wanting, it either proceeds more slowly, or ceases altogether. Thus, in cool dry vaults, dug in an absorbent soil, and through which a current of dry air passes, human bodies sometimes become dry before they have had time to decay, and gradually shrivel up into frightful mummies. So in the dry air of some hot climates, as in the Pampas of South America, and on the borders of the African deserts, the flesh of animals can be dried and preserved for any length of time, without exhibiting symptoms of decay, or any manifest evil odour.

But where moisture continues present—even though warmth and air be in a great measure excluded—decay still slowly takes place, and substances of evil odour and malign influence continue for a long period to be produced and given off. The true chemical nature and exact composition of many of the volatile and gaseous substances, produced under these circumstances, is still unknown; but both theory and experience prove that they are injurious to human health. They are so, even when, from their extreme state of dilution, the organs of smell are naturally insensible to their presence, or when, by habit, they have become so. Hence the custom of placing grave-yards in the neighborhood of our dwellings, or of requiring people to sit for so many hours a-week over putrid family vaults, or heaps of mouldering human dust—is as contrary to the dictates of science and enlightened common sense, as it is to the often-repeated suggestions of sanitary experience. That the senses detect no danger, proves that the senses are not to be relied upon—not that even serious danger is absent.

The Droppings of Animals, both while recent, and during the decay they undergo in the presence of air and moisture, are the source of some of the most unpleasant smells with which we become familiar in common life. These animal excretions emit certain strong-smelling substances which are common to them all, but each variety also gives off smells peculiar to itself.

When in a state of fermentation, for example, all evolve ammonia; but it escapes in especial abundance from horse-dung in hot stables, and from nightsoil in ash-pits and necessaries during hot weather. All also produce and give off the noxious sulphuretted hydrogen

already described; but where nightsoil ferments in close places, such as cess-pools and common drains, this sulphurous gas sometimes accumulates in sufficient quantity to strike down instantly the workman who is incautious enough to place his mouth within its reach. Compounds of phosphorus likewise escape from all, and volatile alkaline compounds, which have not hitherto been particularly examined.

When recent or fresh, on the other hand, each variety emits its own peculiar odor. The droppings of the cow and the horse differ most distinctly in smell, both from each other and from nightsoil. Goat's dung has a smell which it imparts to plants manured with it, so as to give a perceptible flavor even to the tobacco leaf. Pig's dung is to most people nearly intolerable, and even animals dislike it. It not only gives its flavor to tobacco, but, when properly applied, it drives away the wire-worm from the carrot and the onion. The reader will not be surprised to learn that the chemical nature and composition of the compound bodies from which these noisome smells proceed, should still be in a great measure unknown. However interesting, in a physiological and sanitary point of view, it would be to possess a complete knowledge of all the substances which animal droppings contain—of the mode of their production—and of the nature of their several actions on the animal economy—we must be content to wait while it slowly and gradually collects. The inquiry is of too repulsive a nature to be undertaken by any chemist whose love of knowledge, or desire to advance a favorite branch of the science, is not of a very ardent kind.

There are certain known differences, however, in the composition of the solid droppings of different animals, which must affect the nature of the smells they severally emit. Thus man discharges through his kidneys a large proportion of the phosphorus contained in the food he eats; while the cow, the horse, and the sheep, emit none of it in this way. All the phosphorus which these animals eat, therefore, is rejected in their solid droppings; and inasmuch as the compounds of phosphorus which are formed in decaying animal and vegetable substances, are generally distinguished by peculiar and offensive smells it is easy to understand that the droppings of these animals, when they heat and ferment, must emit some—more or less nauseous, and probably injurious—odours, which are not to be recognised in similarly fermenting nightsoil.—*Johnston's Chem.*

Salting of Meat and Fat of Animals.

The application of salt to fresh meat has very much of the same effect as the application of a quick heat. It causes the fibres to contract, the meat to lesson in bulk and the juice to flow out from its pores. Hence the reason why dry salt strewed upon fresh lean meat gradually dissolves into a fluid brine. The effect of the salt, if a large quantity be applied, penetrates deep, so that much as one-third of the juice of the meat is often forced out by the contraction of the fibres. The effect of this upon the meat is twofold. It diminishes the natural flavour, by removing a large proportion of the peculiar substances contained in the juice, and adding pure salt in their stead. At the same time it closes up the pores of the meat, and prevents the entrance of atmospheric air, thus diminishing the liability to decay.

The preservation of flesh meat by salting, depends therefore, upon the separation of water, upon the exclusion of air, upon the saturation with salt of the juice which remains in the meat, and upon the formation of a weak compound of the flesh with common salt, which does not readily undergo decay. But this preservation is attended by a diminution in its nutritive qualities, for the juice which flows out contains albumen (white of egg), kreatin, phosphoric acid, and potash. These substances are precisely the same as are more fully extracted by water, in the method of making savoury beef-tea, already described, and in proportion as they are extracted they diminish the nutritive properties of the meat. Hence one reason why long feeding on salt meat affects the health, and why vegetable and other substances, which are capable of supplying what the meat had lost, are found to be the best means of restoring it.

As a whole, flesh meat is eminently nutritious, because it contains *all* the materials which are necessary to build up our own flesh; but remove from it a portion of these materials, and the remainder becomes more or less useless,—as bricks and stone become useless to the builder if we refuse him the requisite quantity of mortar.

The Fat of Animal and Vegetable Substances.—We have seen that, as a whole, there is much analogy between the bread and the beef,—the vegetable and the animal forms of food on which we live. Between the gluten of the one and the fibrin of the other, we have also found a very close similarity, and that in the animal economy they are both fitted and intended to serve the same main purpose. If we compare the fatty portions of both, we find new resemblances.

Most of the varieties of fat yielded by our common European vegetables are fluid and oily at ordinary temperatures. Such is the case with the fat extracted from wheat, from oats, from Indian corn, from linseed, from the olive, the poppy, the walnut, &c. The fat of the oil palm, however, commonly known by the name of palm-oil, and some other vegetable fats or butters, are solid in the natural state, and at ordinary temperatures. And even the oily fats, olive oil for example, when exposed to a low temperature, congeal or freeze to a certain extent, and allow of the separation of a solid fat in greater or less proportion. On the other hand, those which are solid yield to pressure a quantity of a liquid fatty oil. So that in reality all vegetable fats consist of two fatty substances, one of which is solid, and the other liquid, at ordinary temperatures.

Now, the same is the case with the animal fats—with those of beef and mutton for example, with the butter of milk, and with the oil contained in the yolk of the egg. All consist of a solid and a liquid fat, and in this fact we see a new analogy between our vegetable and our animal food.

But a still further and more intimate analogy exists between the solid portions of the fatty substances of the animal and vegetable kingdoms. When the solid fat of palm-oil is properly purified it is found to consist of a solid, beautifully white, peculiar fatty body, to which the name of *palmitine* has been given. On the other hand, when beef and mutton fats are pressed from the oil they contain, and then purified, the most abundant sub-

stance obtained is a peculiar fat which is known by the name of *stearine*. The remainder consists principally of palmitine.

Now, of these two fatty bodies the solid fat of all our domestic animals almost entirely consists. In beef and mutton fats the stearine is the more abundant. In human fat, in that of the goose, and in that of butter, the stearine and palmitine are in nearly equal proportions. It is the same with vegetable fats. They consist of these two varieties in different proportions. In some the solid part consists chiefly of stearine; in others, as in olive-oil, the stearine and palmitine are nearly equal in quantity; while in others again, as in palm oil, the palmitine is the principal ingredient. Thus, as there is a kind of identity in nutritive quality and value among the compounds represented respectively by gluten in plants and by fibrin in animals, so there is an absolute identity of substance—as regards their solid part at least—among the fatty compounds which are met with in the eatable productions of both kingdoms.

The liquid portions of the fats of animals and vegetables, though generally regarded as being also for the most part identical, are not yet so well understood as their solid portions. It is a fact of practical interest, however that they become rancid by exposure to the air sooner than the solid fats do. Hence hard butter keeps sweet longer than soft butter does. Hence, also, fat meat keeps longer, when salted, if the fat be hard. And hence the reason why, in finishing off fat animals for the butcher, especially if they are to be salted it is usual to give dry food for sometime before killing, that the fat may be hardened and the flesh made firm.

In another matter of detail I might show how, in still more minute matters, animal and vegetable kinds of food are nearly identical. When the parts of plants are burned in the open air they disappear for the most part, as I have already shown, and leave only a small proportion of ash behind. This ash consists of a mixture of various substances, spoken of as their mineral, earthy, saline, or inorganic constituents.

The same takes place when the parts of animals are burned; and the mixture of mineral matters obtained consists, in either case, of the same substances, only differing more or less in their relative proportions. The same things occur in the ash of bread as are found in ash of beef. In whatever degree, therefore, the nutritive properties of our food depend upon the kind of mineral matter it contains, it is almost a matter of indifference whether we live upon an animal or a vegetable diet.

But to this interesting point I shall have occasion to return in a subsequent chapter.—*Johnson's Chemistry.*

Best Strawberries and Cherries.

Several members of the Fruit Growers' Society of Western New York met in Rochester on the second inst., for the examination of strawberries and cherries. After a thorough examination, a vote was taken by ballot in regard to the best single variety, best three varieties, best six varieties, and the best market sort. The following is given in the *Country Gentleman* as a summary of the decisions. The voters comprise several of the most distinguished horticulturists in Western New York:

Strawberries.—From the preceding it will be observed that for the *best single sort*, Burr's New Pine had *three* votes, Large Early Scarlet had *two*, and Walker's Seedling, Cushing, and Genesee had each *one*.

For the *three* best, Burr's New Pine had *six* votes, Walker's Seedling had *five*. Genesee *three*, Large Early Scarlet *three*, Cushing *two*, and Hovey, Crimson Cone, Moyamensing, and McAvoy's No. 1, each *one* vote.

For the *six* best, Burr's New Pine had *six* votes, Walker and Large Early Scarlet each *five*, Genesee *four*, Moyamensing and Hovey each *three*, Crimson Cone and Ellwanger & Barry's No. 1. each *two*, and Old Hudson, Iowa, Jenney, Cushing, Orange Prolific, Trollop's Victoria, and Triomphe de Gand, each *one* vote.

For *bad* strawberries, *McAvoy's Extra Red* polled a *full vote*, evidently on account of its flavor, which is very sour and very poor. *Cushing*, strangely enough, had *two* for its bad quality, and yet was placed by *one* as best of all. This is accounted for by the fact that it is large, handsome, well formed and productive; while its peculiar flavor is very much disliked by some.

Cherries.—*Six* votes for Governor Wood as best, and *two* for Mayduke. For the *three* best, Gov. Wood and Black Tartarian had each *four* votes, Mayduke *three*, Yellow Spanish and Mezel *two* each, and Downer's Late, Sparhawk's Honey, Knight's Early Black, Reine Hortense, Belle Magnifique, and Belle d'Orleans each *one* vote.

Crops of 1855.

So vague and uncertain generally are reports about crops, and so often have apparently the most reasonable calculations proved at fault, that we have generally avoided speculating on the subject. Newspaper reports and reports of travellers differ in their estimates even of the same district, and are often made up from the mere chance assertion of one or two individuals, whose opinions were based only on *casual* observation.

We have in the United States such a variety of soil and climate, such an immense extent of arable land, that a general failure of crops would seem almost impossible from natural causes, and yet the past season seemed more like it, there bring a more general dearth of the necessaries of life, and a more absolute scarcity, than *we* ever recollect to have known. Wheat and Potatoes commanded the past winter, three dollars per bushel; corn one dollar fifteen cents; oats eighty cents; turnips seventy-five cents, and other vegetables in the same proportion. These prices were not the result of mere speculation, but on account of the supply being short of the demand, *decreased* production and *increased* consumption, attributable to the general prevalence of drought, which in many of the finest grain districts of the West, cut off the crops, so that they barely yielded the seed, and destroyed thousands of cattle for want of food or water or both.

The present year with the exception of partial and local failures, our opinion is from the aggregate and united reports from every section of the union, that there has been in the United States an *amount of production* exceeding every thing yet known in our history, and calculated to create astonishment at our resources. It is *yet* impossible to ascertain the amount of *excess* over

any previous year; of wheat alone it is estimated at *sixty millions of bushels*, which is thought by many far too low.

To understand properly the cause of this immense increase of production, it should be remembered not only tnat the whole country has been blessed with abundant rain, but that under the stimulus of high prices, an extra amount of ground was plowed up aud seeded. It is stated that at Syracuse, N. Y., Potatoes are already contracted for at fifteen cents per bushel; on the whole we expect a general fall in prices the coming fall, which will stimulate trade and business by the abundant supply of the raw material, or true basis on which all trade must rest.

List of County Exhibitions in Pennsylvania.

Philadelphia Society in Philadelphia, Sept. 11, 12, 13, 14
Berks Co. Grand Industrial and Agricultural, at Doylestown,.....August 21, 22, 23, 24
Delaware County at Media,.....September 6, 7, 8
Montgomery County at Springtown, one mile from Norristown,.....October 3, 4
Chester County at West Chester,
Westmoreland County,.....October 10, 11, 12
Beaver County at Beaver,.....September 25, 26
Allegheny County at Pittsburg,.....October 2, 3, 4, 5
Monongahela Valley at Monongahela City, Sept. 28, 29
Tioga County at Wellsboro,.....September 26, 27
Mercer County at Mercer,.....October 3, 4
Somerset County at Somerset,.....October 3, 4, 5
Centre Co., 4th annual,
Franklin County at Chambersburg,.....October 2, 3, 4
Berks County at Reading,.....“ 3, 4, 5
Cumberland Co. at Carlisle, 1st. Exhibition, Sept. 19, 20 21
Crawford County at Conneautville,.....October, 16, 17
Somerset County, N. J. at Raritan,.....October 3, 4

State Agriculture Shows for 1855.

Name.	*Where Held.*	*Date.*
Georgia,	Atlanta.....	Sept. 10—
Vermont,	Rutland.....	“ 11—13
Canada East,	Sherbrook.....	“ 11—14
Rhode Island,	Providence.....	“ 11—15
“ “ Horse and Cattle, do.	.....	“ 11—14
New Hampshire,	——.....	“ 12—14
New-Jersey,	Camden.....	“ 18—21
Ohio,	Columbus.....	“ 18—21
Pennsylvania,	Harrisburg.....	“ 25—28
West Virginia,	Wheeling.....	“ 26—28
Kentucky,	Paris.....	“ 25—28
Tennessee,	Nashville.....	Oct. 1—6
New York,	Elmira.....	“ 2—5
Connecticut,	Hartford.....	“ 9—11
Illinois,	Chicago.....	“ 9—12
Canada West,	Coburg.....	“ 9—12
North Carolina,	Raleigh.....	“ 16—19
Indiana,	Indianapolis.....	“ 17—19
East Tennessee,	London.....	“ 23—25
Maryland,	Baltimore.....	“ 29—
Virginia,	Richmond.....	“ 30—2

The Usefulness of Toads.

Toads feed on all kinds of worms, and should never be killed in gardens. The canker worm is a favorite food with them; they are useful in destroying all kinds of garden grubs.—*Scientific American.*

Gold Fish.

It is true that the gold fish has become naturalised in the Schuykill above Philadelphia, or rather perhaps we should say in the Fairmount dam—a distance of miles. They were introduced by the breaking of a fish pond many years ago. The boys offer them for sale in winter of a large size, and fit for stocking your lake, at from ten to fifty cents each. There are hundreds of natural lakes and artificial dams where they would multiply enormously. Last winter, while constructing some dams on a small stream of spring water which empties into the Schuylkill, we requested the Irish laborers to purchase any gold fish that might be offered, and place them in the dams. A few days only elapsed before the works were completed, and on taking a view of them our intelligent superintendent related the following adventure. The cold had been intense, and had frozen the river to an unusual depth; the gold fishes, big and little, repaired to the mouth of our little stream in great numbers, probably for the greater warmth of the water; the freshet having meantime subsided, the man went to the river to see its effects, when lo! the ice had fallen and had caught in a trap at the creek's mouth, *ten dozen* fine large “goldies,” which were taken by the hand, filing a large washing tub, and thus our new water was stocked at once.—*Horticulturist.*

Improved Varieties of Wheat from France.

There have lately been imported three varieties of wheat: The Hungarian wheat; the Neapolitan white wheat, and the early Noe wheat. As the two latter have the property of ripening some days before our common varieties of wheat, if they otherwise succeed in this climate, a great point will be accomplished. A single week gained in the ripening will often secure the crop from the injury of the rust, independent of the advantage gained in the market. The Saumer wheat is originally from the valley of Anjou, a south-eastern province of France, and is a very remarkable variety of Winter wheat. The ear is strong and full, of a reddish color, and is very much esteemed by farmers. The straw is very white, and grows higher than that of ordinary wheat, while it is larger and sweeter. The Noe wheat was introduced by Mr. De Noe, and is commonly known under the name of blue wheat, and owing to its hardy and protective nature, is gradually superseding the Saumer wheat in the central parts of France. It is much sought after on account of its precocity for a meslin or soiling crop. It would succeed well as a March wheat if sown early.

Pleasures of Planting.

Where shall we find so pleasing an appreciation of the pleasures that attest the lover of a garden, as in the following extract of a letter from the venerable Dr. Fothergill:

“Planting and gardening supply a fund of entertainment, the most lasting and reasonable of any occupation in this life, pleasures not to be purchased. The trees which we ourselves have planted, the fruits we have raised, the plants we have cultivated, seem to be like our children, a kind of new creation. Their shade, their taste, their fragrance, and their beauties, affect us with a richer repast than any other. What a pleasing scene lies open to a young man of fortune devoted to such amusements! Each succeeding year produces new shades, other fruits, fresh beauties, and brings besides more profit. To behold the rising groves, barrenness made fertile, our country improved, ourselves made useful and happy, and posterity enriched! I have seldom known a man possessed of a taste for such pleasures, who was not at the same time temperate and virtuous.”—*Horticulturist.*

PENNSYLVANIA FARM JOURNAL.

VOLUME 5. PHILADELPHIA, SEPTEMBER, 1855 NUMBER 9.

In consequence of protracted and increasing indisposition, induced by long continued sedentary occupations, the subscriber has been forced to relinquish his connection with this establishment, and seek, amid rural occupations, and by more active physical exertions, a restoration to health—*the* blessing of life. His interest has been purchased by Samuel Emlen, and the Farm Journal will hereafter be published by Samuel Emlen & Co., N. E. corner of Seventh and Market Streets, to whom editorial or business communications may be addressed.

J. M. MEREDITH.

Notice.

The appointment of all travelling agents commissioned by the subscribers to receive subscriptions to the Farm Journal is hereby revoked. J. M. MEREDITH & CO.

Wheat Turning to Cheat.

We have received from our friend Henry Miller, another communication on the above subject, which we should cheerfully publish, if we thought it would have the least tendency to settle the "mooted question." So much has been already written, that it is reasonable to conclude nothing *more* can be said to produce any change of opinion, either in the believers for or against transmutation. The cheat question, like the question about the moon's phases, will never be settled by any general agreement or conviction. "Those convinced against their will, will be of the same opinion still." *We* believe that wheat never yet has changed to cheat, and never will. Our belief, however, is not of any more value than others, and after being open to conviction for many years, and waited in vain for any single fact in *proof*, the case is now closed on our part, and we cannot be satisfied of the transmutation of wheat into cheat, by anything that can be said on the subject. We doubt not, but that is the conclusion of nearly every body else. We give below a letter from the distinguished Botanist, Prof. Asa Gray, of Harvard College, about a *plausible looking specimen* sent to him, which will answer well for the closing argument in the trial of wheat vs. cheat.

Letter from Prof. Asa Gray, Harvard College.

DEAR SIR:—I have duly received your favor of the 10th inst., enclosing a head of wheat, sent to you as a specimen showing the actual transformation of *wheat* into *chess* on one side of the ear. Having a leisure moment, I have just submitted it to examination, in which I have had the assistance of Mr. Sanford Howard, editor of the Boston *Cultivator*. The spikelet of chess is very evident to observation on one side of the spike. The only question was, whether it was really attached to, or grew from the spike of wheat. On detaching that spikelet of wheat to which it seemed to belong, under a moderately magnifying lens, to secure a more certain view, it was at once evident that the spikelet of chess was *merely entangled* in the wheat by its long and slender stalk, but had no organic connection with it. I return it to you, herewith, undisturbed; that you may satisfy yourself or your friends who believe in transmutation, as to the real state of the case.

A year or two ago I received a similar specimen from Michigan or Iowa, I forget which. I then thought that the chess had been purposely introduced into the wheat spike. But I am now convinced that it was accidentally entangled, as Mr. Howard suggests, and it is easy to see how this might readily take place. Very respectfully yours, ASA GRAY.—*Michigan Farmer.*

Westmoreland County Agricultural Society.

EDITOR OF THE FARM JOURNAL:—DEAR SIR:—"The Westmoreland County Agricultural Society" will hold its "second annual Exhibition and Fair" on the 10th, 11th, and 12th days of October next, at Greensburgh. Our premium list is a large and liberal one, and every convenience and accommodation will be afforded to Exhibitors. How does it come that Manufacturers do not send specimens of their fabrics to the County Exhibitions? Don't they know, that it would be the very best method they could adopt, to dispose of them? If it be *our* interest to purchase, surely it is no less the interest of the Manufacturer to exhibit his wares. Shall we have any thing from the *City*, at our Show, or "is it not worth while?

The following persons compose the Officers of the Society, for the current year.

PRESIDENT—F. J. Cope.

RECORDING SECRETARY—John W. Turney.

CORRESPONDING SECRETARY—D. K. Marchand.

TREASURER—Thomas J. Barclay.

COMMITTEE OF ARRANGEMENTS—John Eichar, James Trees, John W. Turney.

Board of Managers, and several Vice Presidents, whose names I cannot just now furnish.

In our list of premiums, a large number of the "Farm Journal" are substituted for "cash," as we think we can serve the cause of Agriculture by introducing your pe-

riodical into families who would perhaps not otherwise get it. F. J. COPE.

Hemphill, near Greensburgh, Westmoreland Co., Pa. July 26th, 1855.

Steam for Agricultural Purposes.

The Royal Agricultural Society of England have offered a premium of two hundred pounds for the best steam-cultivator or substitute for the plow. The competition was to take place at the annual exhibition of the Royal Agricultural Society at Carlisle, July 19th. As the subject has excited very considerable attention in England, we copy from the English Agricultural Gazette, a letter addressed to the committee having control of the awards, in which are set forth the alleged advantages of the steam-cultivator or digger, over the plow and spade. The inventive genius of the two countries, heretofore chiefly directed to other branches of industry, has now fairly turned towards Agriculture. But a few years ago Reaping and Mowing Machines were thought impracticable, and seeing what has been done in them and other implements, it will hardly do to be startled now even at the idea of the introduction of *steam* for Agricultural purposes. The article is as follows:—"Two hundred pounds for the steam-cultivator that shall in the most efficient manner turn the soil, and be an economical substitute for the plow or the spade.

"*Turn* the soil." Mark this expression; for the whole character and efficiency of the machine depends on this point. Break up, loosen and commingle the soil as much as you please, in preparing a seed-bed for any crop, but if weeds and grasses be left still green on the surface, if the seeds of our annual infesting enemies remain in favorable exposure to the vivifying sunshine and feeding dews, your tillage will be utterly abortive. On the other hand, if the ground be a stubble, bury every weed and withering stalk, and you promote its decomposition in the soil, making manure of what would otherwise injure as well as encumber; if it be a sward or a lea, still more urgently must you inter every blade and plant that might spring up amongst your intended crop. In the fundamental operation of tillage, the destruction of all remnants of old crops, and the loosening-up of the staple for a succeeding one you must "turn the soil." Was it not for this very purpose of burying obnoxious vegetation, and opening up a fresh surface of earth, that plows with mouldboards superseded the imperfect scratching instruments of yore? Is not the chief fault of the plow itself that it does not completely hide all surface vegetation, but too often (especially when the plowman is blameable) leaves grass or other living growth to shoot up among the seams of its furrows, and defy the weeder of the coming crop? For many tillage purposes—such as autumn cleansing or spring grubbing—no such inversion is needed; but in the first and foundation work of breaking up after a crop, and to the full depth of the intended staple, you *must* "turn the soil." Perhaps an instrument able to stir and mix every portion of a deep staple, might be made to bring up repeated instalments of earth long buried, and thrust down the long exposed surface to take its place, at the same time forking out root-weeds and rubbish. As far as fertilisation is concerned, perhaps a frequent *commixing* of soil and subsoil might suffice, instead of alternate exposure of each upon the surface; but the consideration of weeds alone inculcates the necessity of "turning the soil." Therefore we maintain that the first condition of the Society's offer is well chosen, and that the premium will be misappropriated in the opinion of practical men, if given to a machine (no matter how expert at comminution) that cannot entirely bury the surface.

Then it must be also "an economical substitute for the plow or the spade." If there shall be an engine that turns over furrows effectively at less cost than the plow—(first expense included) although it may be incapable of any other labor—give it the prize. And should there be a machine unable to plow at all, but able to dig in as perfect a manner as men can with spades—if it will perform this work alone more cheaply than men, it is entitled to the prize. Plowing ought to be accomplished for less money than by horses, and digging (though this of course is a more expensive operation) at less cost than by men.

The judges have not to determine whether or not digging *a la* spade will be too expensive for the farmer although indispensable to the market gardener; whether or not a cheaply-digging engine would not inaugurate miracles upon the clays; but (useful or not) *according to the terms of the offer*, they must award the premium either to an engine that digs more economically than the spade, or that plows more economically than our present horse-plow. Should a machine be produced of sufficient versatile powers to execute both shallow work like a plow and deep work like a spade, such a doubly clever contrivance will of course merit the palm.

Before awarding the prize and so pronouncing some invention to be an "economical substitute" for the implements with which we break up and invert whole ground—not merely for the grubbers and harrows with which we stir and pulverize soil already broken—let the judges well weigh this point of "economy." They must not sanction with the authority of the Society, any machine that they dare not recommend to farmers or gardeners in place of the plow or spade. Besides the working expenses, they must calculate the wear and tear and the interest of the first outlay in purchasing the machine; and on the other side of the account they must be prepared with similar estimations of the charges for food, attendance, depreciations, &c., attaching to horses and common implements. On the credit side they will have to compare the excellence or inferiority of the respective operations; and particularly they should fix a money value upon the *time saved* in the performance of the work, inasmuch as there is a great advantage in having a breadth of land prepared for sowing in less time than usual though the acreage expense may be the same; and any means (without incurring any neutralising disadvantage), which gives the husbandman greater command over his soil, and more independence of the weather, is certainly to be valued as a pecuniary gain.

Perhaps it may be unwise in the judges to trouble themselves with any further speculations as to the probable effects of displacing a considerable part of the farmer's teams, employing more or less laborers, &c.; as it has been generally found that when a new machine is worth having—the steam thresher, for instance—all questions as to the disposal of surplus horses, &c. &c., regulate themselves very easily and speedily. Once furnish the Agricultural public with a really "economical substitute" for anything, and depend upon it JOHN BULL is too shrewd to let his love for antiquities prevent him from using it.—I. A. C.—*Eng. Ag. Gazette.*

Agricultural Division of the Patent Office.

MODE OF EXTRACTING TALLOW FROM THE TALLOW TREE.—A few days ago, a gentleman residing in Texas addressed the Commissioner of Patents in regard to the tallow tree, and desired to be furnished with the best mode of extracting the tallow. We copy the method recommended by this office

"The seeds of the tallow tree (*stillingia sebifera*) are picked in China at the commencement of the cold weather, in November and December, when all the leaves have fallen. The seeds are in the first place, taken to the building where the process of making the tallow is carried on, and picked and separated from the stalks. They are then put into a wooden

cylinder, open at the top, but with a perforated bottom. This is placed over an iron vessel (about the same diameter, or rather larger than the wooden cylinder, and about 6 or 8 inches deep) containing water by which means the seeds are well steamed, for the purpose of softening the tallow and causing it more readily to separate. The furnace has four or five iron vessels in a row, about three feet high, four or five feet broad, and eight or ten feet long. The fire is placed at one end and fed with the husks of the rice, dry grass, and such like cheap materials, which make a great flame, and the flue is of course carried directly under the whole of the iron vessels.

When the seeds have steamed ten minutes or a quarter of an hour, they are thrown into a large stone mortar, and are generally beaten by two men with stone mallets for the purpose of detaching the tallow from the other parts of the seed. They are then thrown into a sieve, heated over the fire, and sifted, by which process the tallow is separated, or nearly so, although they generally undergo the process of steaming, &c., a second time that nothing may be lost. The other part of the seed is ground and pressed for oil.

The tallow now resembles coarse linseed meal, but with more white spots in it and derives its brown color from the thin covering over the seed, (between it and the tallow,) which is separated by the pounding and sifting. In this state it is put between circles of twisted straw, five or six of which are laid upon each other, and thus forming a hollow cylinder for its reception. When this straw cylinder has been filled it is carried away and placed in the press, which is a very rude and simple contrivance, but which like every thing Chinese, answers the purpose remarkably well. The press consists of longitudinal beams of considerable thickness, placed about a foot and a half or two feet asunder, with a thin plank at the bottom, forming a kind of trough, and the whole is bound together with iron.

The tallow is pressed out by means of wedges, driven in very tightly with stone mallets, and passes through a hole in the bottom of the press into a tub, which is sunk there to receive it. It is now freed from all impurities, and is a semi-fluid of beautiful white color, but soon gets solid, and in cold weather is very brittle. The inside of the tubs which collect the tallow is sprinkled or dusted over with a fine red earth, well dried, which prevents the tallow from adhering to the sides. It is thus easily removed in a solid state from the tubs, and in this condition the cakes are exposed for sale in the market. As the candles made from this vegetable tallow have a tendency to get soft and melt in hot weather, they are commonly dipped in wax of various colors, as red, green and yellow. Those which are intended for religious purposes are generally very large and finely ornamented with golden characters.

The cake, or refuse, which remains after the tallow has been pressed out of it, is used for fuel, or to manure the land, and so is the seed from the other part of the seeds from which oil is extracted."

It may be remarked that this tree has been cultivated in South Carolina for more than a hundred years, and appears well adapted to the climate.

Making Butter.

I do not propose to go into all the mysteries of making and preserving butter, but give some general facts which those who are desirous of learning may turn to account. It has already been stated that cream is a mixture of oil, or butter (for, with the exception of a little salt, it is the same thing) and curd. The butter, in small globules, is wrapped up in little sacks, or bags, of curd.

Now the thing to be done, in order to make butter, is, to break open these sacks and let the butter out. When this is done, we say, "The butter comes; and sure enough it does come—comes out of the sacks. Those globules which were before kept apart by the sacks, come together, thousands, of them, to form a particle large enough to be seen by the unaided eye. And now does the reader say the more violently the churning is done, the sooner will the sacks be broken? Not so. You cannot break them by mechanical force; it is a chemical process. Put them in right circumstances, and they will break open themselves. Pounding will not break them. They will slip away from under the blows unbroken, just as a foot-ball will leave your foot when you give it a hard kick, but will leave it whole. Pressure will not break them. Nothing will break them till you put them into the *right circumstances*, as to *temperature* and *exposure to air*,

At 40° Fahrenheit, you might churn from January to March, or at 100° you might churn from June to September, and no butter would come. Or if you were to exclude the air entirely from the inside of the churn, you might roll that churn, with the cream in it, from Cape Horn to Labrador, and the butter would not come.

All the processes of nature have their conditions. The separation of butter from curd is one of these processes. *The conditions must be complied with.* We will suppose that the cream is from cows that give good milk. The farmer is unwise who keeps any other. Some cows' milk will not give much butter, for there is not much butter in it. We will suppose also that the milk has been kept at a temperature about medium between freezing and summer heat; that the cream has been taken off while the milk was yet sweet, and has been kept in a cool place till it was a little sour, or was very near the point of souring; that it is now put into a clean churn, and brought up to a temperature of about 60° Fahrenheit, gradually and without much stirring; and that we now begin to lift the dasher, or turn the crank as the case may be, either forcing air into the cream by some patent contrivance, or at least letting air have free access to its surface, and now let us see what happens.

By stirring the cream we change the surface often, and thus bring all parts of it successively into contact with the air. The oxygen of the air combines with the curd, and renders these little sacks, into which it is formed, brittle, so that they crack open, and let out the enclosed globules of butter. These come together forming larger masses, until, if the churning be continued long enough to *gather the butter*, as it is sometimes called, nearly the whole will be found in one mass. The curd is now nearly separated. It is floating in the buttermilk. The sugar of milk is diffused through both the buttermilk and the butter, giving a peculiar sweetness to the butter and also to the buttermilk, if the cream had not become too sour before churning. This is an important consideration; for it is this sugar of milk that performs the double office of giving to the butter a luscious flavor, and of causing it to keep well.

Washed butter may have a tolerable flavor at first, for it will retain a part of the sugar of milk in spite of bad management. But it will have given up to the water too much of its sugar of milk to allow of its keeping for any considerable time. Put down a firkin of butter that has been washed, and another precisely like it in every other respect, but which has seen no water, let them be from the same churning, be put up in similar firkins, and kept in the same place, and the unwashed will keep best for an absolute certainty. No more absurd practice ever came into vogue than that of washing butter in floods of water. There is some advantage in washing very rancid butter, for some of its bad properties may be washed out. It may be made tolerable. But if we

wash fresh butter, we wash away the part that is essential to its richest flavor and to its preservation. No water should be put into the churn, and none used in the process of working.

The butter should be taken from the churn with a wooden ladle; should be worked with the same; when nearly all the buttermilk is worked out, pure fine salt should be added, it should be salted to the taste. More salt than is requisite to gratify the average taste for this article, has no tendency to preserve butter, but rather the reverse, unless the salt is absolutely pure, which seldom happens. Most salt contains a little lime and a little magnesia; and when this is the case, any more than enough to salt to the taste, not only gives the butter a bitter flavor, but actually hastens its putrefaction. It is very important that the best of salt, as pure as can be obtained should be used for butter.

I will here lay down a rule by which the dairyman can tell whether his salt is sufficiently pure for this purpose. To eight lbs. of salt, in a clean wooden vessel, add one pint of boiling water; let it stand an hour; pour it upon a thick strainer, and let the water pass into another vessel. The lime and magnesia, if any were present, have passed through in the water together with a part of the salt—possibly a quarter of the whole. What remains on the strainer is nearly pure salt. Let that which has fallen into the vessel be put into the cattles' trough. There need be no waste if all the salt used in a dairy were thus washed. Now, with washed salt, let a lump of butter be salted; and let another, from the same churning, be salted with some of the same salt unwashed. If the latter have a bitter taste, from which the former is free, you may conclude that the salt contains lime, or magnesia, or more probably both; and that the whole should be washed, as above described, before being used for butter, or else its place should be supplied by purer salt.

Many a pasture has been blamed for producing bitter weeds, when all the bitterness was in the salt. The pasture was well enough, but the salt manufacturer could make half-purified salt cheaper than pure.

We have said that all the butter milk must be worked out. This is true, but it is liable to be misunderstood. What is buttermilk? It is water with fine particles of curd, a very little oil, and a little milk-sugar in it. The particles of curd give it a whitish appearance. Now, the butter must be worked till this whitish appearance has ceased, but not till the last drop of liquid has left it. The best butter in the world is full of fine particles of a transparent liquid. It would not be best to work these out if you could, for the butter would then become tough and waxy. More butter is damaged by not working it enough, but much is damaged by working it too much. The dairy-woman should watch the complexion of what flows from the butter as she works it. When this becomes perfectly transparent, limpid, like pure water, with not the least whitish appearance, the operation should cease at once, for whatever is taken out after that is a damage and not a benefit to the butter. It is not buttermilk, it is water, with a little salt and sugar dissolved in it, and is an essential part of good butter.

I have used firkin butter from Madison County, N. Y., nearly a year old, which was as fragrant and as sweet as new made butter; and on examining it with a microscope, I have found it full of exceedingly fine globules of a transparent liquid. It rubbed with a knife-blade, these would run together and form drops, as limpid as spring-water. Could they have been analyzed, I have no doubt they would have been found to contain salt, water and sugar, but no curd. Had they contained the least curd, it would have putrefied, and would have spread putridity, offensive to taste and smell throughout the whole mass.

I have before stated that the nitrogeneous substances, *curd* (caseine), *gluten* (as the tough stringy part of wheat-flour) and *albumen* (as in eggs), are quick to putrefy, and that they always act as yeast, to spread putrefaction. It is on this principle that a particle of curd in butter will create and spread putrefaction all about it. The sugar of milk contained in these transparent globules of liquid is conservative; the salt dissolved in them is conservative, if it be really pure salt; but the curd, if there be any, is destructive. The true idea therefore of working out all the buttermilk, is, to work out all the curd, and there to stop, and not go on and work out all the life and flavor and conservative principle of butter, leaving it as some do, little else than a mass of dry wax.—*Nash.*

Compost Heaps.

(CONTINUED FROM PAGE 246.)

Take any of our ordinary policy-grounds studded with deciduous trees and clumps, autumn after autumn strewing the ground with decayed umbrageous leaves, which both earth and air helped to produce, and what an amount of manure is here provided for the soil! These leaves, if gathered together immediately after their fall, and watered and fermented in a pit covered over with soil, either alone or compounded with other substances, like green herbage, will produce a most valuable fertilizing agent. In plantations, too, the leaves may not only be collected in autumn but during the summer every description of rank vegetable matter should be cut, and removed to the fermenting pit. Amongst young trees, the cleaning of the surface and preventing their being choked will increase their growth, and render the cutting of the herbage remunerative, without even making any allowance for it as a manure. Just set a man with a scythe and rake into any of our luxuriant plantations, whether young or old, and if he does not, by ordinary labor, pay double his wages, it will indeed be very surprising. In many alluvial spots a cart-load of ferns or other rank vegetables may be gathered in an hour or two. From such places, also, how very frequently might a large quantity of valuable soil be obtained for composts.

On many of the swarded avenues, rides and walks about gentlemen's seats, the grass is frequently cut and thrown out of the way, or given to some person at a low price, or for the cutting While perfectly aware of the necessity for the herbage on such places being kept short, and of the labor entailed in securing this end, I do think that, by regarding it as a manure, something more might be made of it than is generally the case. Careful attention to such available manures is no new theory, but one which, from being long neglected, seems almost new in practice.

The Greeks and Romans, immediately preceding and following the Christian era, were very attentive to the collecting and preserving of every substance capable of being converted into manure. "You may make manure," says Cato "of these things, stubble, lupines, straw, bean-stalks, chaff, haulm, and oak-leaves. From the cornfield pull out dwarf elder hemlock, and all the tall grass and reeds in the willow plantations, and lay them below the sheep and cows." Columella also remarks, "I am not ignorant that there are some farms in the country in which neither the dung of cattle or of birds is to be got. However, even in such places, he is a slothful husbandman that has no manure. He may collect any kind of leaves, the cuttings of briers and rakings of highways; he may cut ferns, which, though on the fields of his neighbors, will be rather an advantage than an injury to him, and mix with the cleanings of the court-yard; he may dig a hollow place, such as we directed to be done for the dunghill, and throw it into ashes, the dirt of the kennels and jakes, all kinds of straw, and everything that is swept from the

house." Practices so ancient, so good, and never of greater importance to the agriculturist than at the present time, are certainly deserving of being carefully adopted by every practical farmer.

A large amount of valuable compost may often be obtained by the fermentation of the roots of *Triticum repens*, that troublesome plant, known in some districts by the name of couch-grass in others as twitch-grass or quicks. In many instances farmers are so improvident as to burn these roots on their land but if they were consulting their own interest they would ferment them, and subsequently use them in compost-heaps.

Foreign Substances.—Every description of animal, vegetable, and mineral matters, not generally obtainable on the farm may be comprehended under this head.

(1.) *Blood* is a powerful fertiliser, both from the amount of nitrogen and phosphate of soda which it contains. The dry matter of lean flesh and of blood are nearly similar in composition, as will be exhibited in the following table by Dr. Playfair:—

	Dry ox-blood	Dry ox-flesh
Carbon,	54.35	54.12
Hydrogen,	7.50	7.89
Nitrogen,	15.76	15.67
Oxygen,	22.39	22.32
	100.00	100.00

The per-centage of ash in dry flesh is 4.23, and in dry blood 4.43; the ashes of ox-blood, according to Enderlin, contains the following ingredients:—

Phosphate of soda,	16.77
Chloride of sodium (common salt,)	59.34
Chloride potassium,	6.12
Sulphate of soda,	3.85
Phosphate of lime and magnesia,	4.19
Oxide and phosphate of iron,	8.28
Gypsum and loss,	1.45

From the quantity of ammonia which is liberated during the decomposition of blood, it should not be applied to the land as it comes from the shambles. The best way to preserve the whole fertilising ingredients is to mix it with soil, clay, peat, and similar matters. By Professor Way's investigation, relative to the absorbing power of soils, we know that, theoretically, this is the safest way to obtain all the fertilising substances present; and practically, such enclusions have been repeatedly corroborated. The only drawback is, that, as blood contains from 72 to 89 per cent. of water, the removal of larger quantities from the shambles to a distance of several miles may appear more expensive than would in many instances be remunerative. The profitableness of such undertakings must, of course, depend very much upon circumstances; but in general, if the blood is got within four or five miles, at a trifling cost, it may be used in compost-heaps with as great profit as any other kind of refuse matter. Applied to cruciferous plants, almost no other description of composts will yield such fine crops. I have also often used a compound manure of this nature for fruit trees and gooseberry bushes, and have found it unequalled by any other substance.

Professor Johnston tells us that in Northamptonshire, composts are made by mixing about fifty gallons of blood with eight bushels of peat-ashes and charcoal powder. The mixture is then allowed to stand for a year or two, and when applied to light soils, greatly improves the crops. If properly managed, there is no need of so much time being lost; but our remarks on the preparation of such composts will be made after noticingthe other refuse matters of the shambles. A portable manure made from blood is used in France and some parts England. The of blood is evaporated to dryness, and then mixed with some pulverulent substance and sown with a drill. In this dry condition it was sold in Paris at 8s. per cwt. In London samples containing 22 per cent. of water have been valued £8 or £9 a ton.

(2.) *Flesh and other refuse matters* of slaughter-houses are fertilisers of the first order. The ingredients present in the offal of the shambles cannot be completely represented by the analyses of flesh, but the nitrogenous compounds will be nearly similar. According to Dr. Playfair, we have seen that ox-flesh contains 15.67 per cent of nitrogen; and Liebig has shown that flesh contains a much larger quantity of potash than blood, and consequently it deserves especial attention as a manure. Turnbull & Co's prepared ground-flesh manure, in a gritty state, usually contained, according to Dr. Anderson:—

Water,	12.17
Organic matter,	78.44
Phosphates,	3.82
Alkaline salts,	3.64
Sand,	1.93
	100.000
Ammonia,	11.20

From this analysis it is evident that refuse fleshy matters are of great value as fertilisers.

In 1852, turnips were raised under my charge with Turnbull & Co's flesh manure; and, in contrast to such as were grown with Peruvian guano, they were certainly in no respect inferior though produced at a fully less cost. The great matter in the preparation of fleshy tissues for use in the field as manure is to putrify them with substances capable of absorbing the large amount of ammonia given off. If the prepared compost is to be sown with the drill, it is necessary to use only such matters as will readily become pulverulent. In other cases, any sort of earthy matters, clay, or road-scrapings, will be suitable for securing economical decomposition. In speaking of flesh manures, I may notice the offal of the Edinburgh slaughter-houses. According to the annual returns up to 1st August 1853, it appears that, during the year ending at that date, there were slaughtered of—

Cattle,	20.321
Swine,	2.970
Calves,	5.763
Sheep,	97.280
In all,	126,334

animals, from which, in the form of manure, the following sums were realised:—

To manure sold, 1338 tons, 16 cwt., 3qrs., at 4s. 8d.,	£312 7 4
" liquid manure for nine months,	7 10 0
" blood 401 puncheons of 150 gallons each, at about 1 1-7d. per gallon,	287 2 0
	£606 19 4

By the number of animals slaughtered during the year, the above sum yields only about one penny and two-thirteenths per head, a sum which, even considering the large number of sheep included, is very small indeed. To such manures the attention of the farmer cannot be too frequently directed; and though it is his interest to buy as cheap as possible, still it is often bad policy to allow valuable fertilisers, like the refuse matters of slaughter-houses, to slip out of his hand for the sake of a few pence on the ton. It is quite evident that the 1338 tons of solid manure, disposed of at the Edinburgh slaughter-houses last year, might have been used on the farm with nearly an equal quantity of earth, peat, or similar matters; and if the mixture had been saturated with blood and liquid manure, it would have been of as great value as the solid offal used alone. Much loss is suffered by

the farmer decomposing slaughter-house manure by itself, or even in conjunction with farm-yard dung, as it is only when in contact with absorbent substances such as soil that its volatilised ingredients can be secured for use in the field.

(3.) *Fishery refuse*:—In some sea-coast districts, the refuse of fishing stations is of considerable value as manure. Sometimes when shoals of sprats are caught, large quantities are applied to the land. By bad management they are occasionally spread on the surface of fields, and not immediately plowed in—a system, in warm weather, as injurious to the health of the neighborhood as it is wasteful on the part of the farmer. If immediately plowed in, scattering the fish over the surface may do very well, but in ordinary circumstances it is much safer to use them in compost-heaps. The following is the average of two analyses of sprats by Professor Way;—

Water, ...	64.125
Oil, ...	19.050
Dry nitrogenous matter, ...	16.825
	100.000

The dry nitrogenous matter contains, on an average 11.53 per cent of nitrogen. The mean of two analyses gave 42 parts of phosphoric acid and 19.56 of potash in the 100 parts of ash. A very instructive fact has been mentioned by Mr. Way, namely, that the proportion of nitrogen in fish is nearly the same as in wheat, each having about 2 per cent. He observes; "We know that wheat contains everything that is necessary to support life and increase the animal frame; in other words, is identical, or nearly identical, in composition with the body which it nourishes. Sprats, then, may be taken as the type of the animal, wheat as that of the vegetable life: and there can be no doubt of their mutual convertibility when placed in the proper circumstances. At Queensferry, sprats have been sold for manure at from 3s. to 6s. a cart-load.

But however valuable they are as a manure, it is questionable whether sprats ought to be caught merely to serve this purpose, as the ultimate effect must be prejudicial to the fisheries. Herring gut, and the offal of cod, ling, and saith fish are used as manure in many districts in Scotland. On the south side of the Moray Firth, the fish-curers get about 2s. a barrel, or 12s. a cart-load for the refuse. At Wick the price is 1s., and at Hemsdale from 3d. to 6d. a barrel. In other instances, the proprietor of the estate on which the fishing station is situated claims the refuse without price. The way to prepare such fish-refuse in the field, is to form a layer of earth, peat, or other bibulous matter, 6 or 8 inches thick, as a beginning to a compost-heap. Over this should then be spread a layer of the refuse about 2 inches thick, and above it another coating of earthy or peaty matter from 4 to 6 inches in thickness, then over the mass a suitable quantity of fish-brine or dissolved salt should be poured. Another layer of fish, earth and brine follows in regular alternation till the heap is of sufficient height. After being allowed to putrefy for a month or six weeks, more or less according to the nature of the weather, the compound should be turned, and in a week or two applied to the land. Of course, while salt is necessary to prevent the fish-refuse from being entirely consumed by maggots, care must also be taken not to use more than is necessary to serve this purpose. It has been said that sometimes heaps of fishery-refuse have literally run away through the millions of maggots that have been bred in them. In numerous instances, however, by an overabundant use of brine, cereals have refused to grow the first application. When properly prepared, fish-composts are preeminently adapted for promoting the growth of cereals. Mr. Methven, the fish-curer in Leith, mentions a case which came under his notice in the year 1820, at one of the northern fishery stations. A poor of piece land, which never produced oats more than from 18 to 20 inches in height, was dressed with some sorts of compost containing a considerable proportion of putrid fish matter; the following year the crop was uniformly from 4 to 4½ feet in height, and the yield was highly remunerative. Composts prepared in the way already mentioned, and used in conjunction with farmyard dung, are well adapted for the production of turnips or other green crops on ordinary soils, but applied alone the action is to evanescent to serve a whole rotation. From the fact that guano is only the digested dried remains of fish, we may at once see the propriety of carefully saving every description of fishery refuse for use on our fields.

Notes on Pears last Season.

BY JOHN B. EATON, BUFFALO, N. Y.

In fulfillment of my promise, I send you some brief notes of my experience with Pears. Most of the varieties were fruited upon young trees, many of which were bearing their first crop. This should not of course be taken as an infallible test of their future excellence or inferiority, although the land upon which the greater part were grown was deeply cultivated and well supplied with manure, with which the trees were also mulched. As a consequence of these precautions, the extraordinarily dry season, which so greatly decreased the produce (both in size and quality) of many plantations, did not, as a general thing, reduce the size of our specimens, and we grew *Duchesse d' Angoulème*, *Beurre Diel*, *Louise Bonne de Jersey*, and many others, to a size which I have rarely, if ever, seen exceeded.

The blight has destroyed a few trees the past season, but has not prevailed as an epidemic, and is, I think, gradually leaving us. Timely amputation of the affected part has saved a portion of those trees which were first attacked in the branches; but the remedy, to answer any good purpose, must be applied without hesitation, and *severely*—cutting far below any appearance of disease, otherwise the diseased sap will have poisoned the lower part of the branch before the application of the knife.

Nearly all of the varieties were fruited on the quince stock. A few, which will be specified, were from standards.

Ananas d' Ete is a handsome pear of a somewhat elongated obovate form, of good size, but wanting in flavor. Our specimens may have been picked too early, but their quality sadly disappointed me. Ripe from the first to the middle of September.

Beurre Goubault—medium in size, roundish, not very buttery, but "very good." An apparently profuse bearer, but wanting color. Middle of September.

Bloodgood, although not much spoken of among so many new varieties, is one of my especial favorites among the early pears. Its peculiar aromatic flavor has few counterparts, but I find it a little uncertain in size, and does not grow very well on quince, even when double worked. "Very good." September.

Beurre d' Amalis is a large, showy fruit, although not well colored, and a great bearer on the quince. Still, I would not cultivate it unless for market, and consider it no better than "good." September.

Bartlett needs no description. Our specimens were very fine—rather better from dwarfs than standards; but the quality of the fruit is so far below its appearance, that I am always a little disappointed, in spite of myself, on eating one. "Good." First to middle of September.

Beurre de Paimpal is a pale green, ungainly-looking fruit, not unlike the *Verte Longue*, with which it may be identical. It is too indifferent, however, to cause much anxiety as to what kind it is. September.

Belle Lucrative is, in my opinion, almost perfection; and if required to choose between it and the *Seckel*, I should, without hesitation, make choice of the former. Its fine size, (we had specimens nearly three inches in diameter,) productiveness, exquisite flavor, and the beauty of the tree, render it one of the most desirable varieties, even in the smallest collection. "Best." September.

Belle Epine Dumas, a medium-sized, pyriform, greenish fruit, we have fruited under the names of *Epine Dumas* and *Duke of Bordeaux*. It has no very striking points of excellence, although it has had a good reputation. It has a singular habit of sometimes bearing a cluster of imperfect, deformed fruit, on the end of the current year's growth, which of course never mature. This I have also *occasionally* noticed in the *Duchesse d' Angouleme*, and some others, but it seems to be a fixed habit with this variety. "Good."

Beurre Diel is a beautifully formed fruit of the largest size. I have eaten specimens which were "very good" *indeed*, but this season it was not so fine as usual, whether from the large size of the specimens, or some other cause, I am unable to say. I consider it, however, "very good." October.

Brown Beurre, although when in perfection it has scarcely a superior, is very uncertain. I think that it requires higher cultivation than any other variety that I know, and also pretty severe pruning and thinning. The best specimens that I have ever eaten were from a tree which had borne such miserable fruit the preceding year, that it was headed down severely, and grafted. The few branches which escaped the knife bore magnificent specimens—large, fair, and almost rivalling the *Seckel* in high flavor, though of an entirely different stamp of course. The tree was a standard, of moderate size, standing on gravelly soil. This season the fruit was poor, as also that from dwarfs. Generally "very good." October.

Bezi de Montigny proved, this season, "very good," contrary to its usual habit. Still, I do not consider it worthy of cultivation. October.

Beurre Langelier ripened in November, as did all our winter pears, in consequence of being kept too warm, and was of no value. I have eaten it before, and considered it "very good." Our trees on the pear stock fruited very early and abundantly, but the specimens were small.

Beurre d' Aremberg—"very good." Its rich, vinous juice can scarcely be excelled.

Beurre Gris d' Hiver Nouveau has more the appearance of a *Gray Doyenne* than a *Brown Beurre*, as its name indicates. It promises to be a fine pear, but did not ripen well this season.

Beurre de Rance was worthless, notwithstanding its high reputation.

Colmar de Aremberg is a huge humbug, and utterly worthless, in my estimation, for any purpose, but to show. It should be put on the rejected list. October.

Chamoisine—a most beautiful fruit, somewhat resembling in form the *Easter Beurre*. In color a soft waxy yellow, with a brilliant red cheek, but the most miserable pear that I think I ever tasted. It may be better another year, but I doubt it very much. October.

Chaumontel is exceedingly unsatisfactory. It bears profusely, and sometimes is very fine, but almost impossible to ripen. Although a winter pear, the best that I ever ate were blown off the tree in October, and were really "very good;" but at its proper season I can do nothing with it. Mr. Robert Manning once stated to me that the results of his experience with it were nearly similar.

Columbia, although ripening in November, was "very good"—much better than I expected—and beautiful in form and color, the latter a soft yellow. It has so far borne very early and profusely, especially on grafts.

Catillac I consider worthless, for I do not believe in cultivating pears, or apples, for cooking alone. Many pears are good for culinary purposes, besides being *edible*, at least, which the *Catillac*, *Uvedale's St. Germain*, and some others, are not. *Beurre de Louvain* I have suspected of being the *Catillac*, but when genuine it is distinct. It may, I think, be placed in the same category, nevertheless.

Doyenne d' Ete did not equal my expectations. It was too small, and scarcely "very good." Still it was the first crop, and the second will probably be better. August.

Dearborn's Seedling is another "little bit" of a pear, which, although very good so far as it goes, deserves to be superseded by a larger one. Until we find such a variety, we must, I suppose, cultivate it for its earliness. August.

Dumortier—very small, and good for nothing, October.

Duchesse d' Angouleme is a magnificent pear, and one that has been much abused. I know no pear of its size, or approaching it, which is equal to it in quality, except sometimes the *Beurre Diel*. When a tree is overloaded, as will frequently happen, unless carefully thinned, the fruit is wanting both in size and quality; but it is usually "very good" with us, and I have sometimes eaten it nearly equal to the *White Doyenne*, which, in Western New York, is no faint praise for any pear. Although it is generally condemned as a standard, we grow beautiful specimens on grafts on the tops of large trees, which are not inferior in flavor to those grown on dwarfs, and are frequently more highly colored. October.—*Horticulturist.*

United States Agricultural Society.

By the following circular it appears the United States Agricultural Society are going to hold an Exhibition at Boston. The mere announcement of the fact, is sufficient to indicate that it will be fully successful. Our Boston friends don't undertake any thing of the kind, without first erasing the word "fail" out of their dictionaries.

A Grand National Exhibition of Stock—Horses, Cattle, Sheep and Swine—open to competition to all the States of the Union, and to the British Provinces, will be held by the United States Agricultural Society, in the city of Boston, on Tuesday, Wednesday, Thursday and Friday, October 23, 24, 25, and 26th.

Twenty-Thousand Dollars have been guarenteed by patriotic gentlemen of Boston and its vicinity to defray the expenses; the City of Boston has generously granted to the Society for present use, a fine public square of fifty acres; and Ten Thousand Dollars will be offered in Premiums, in the various departments.

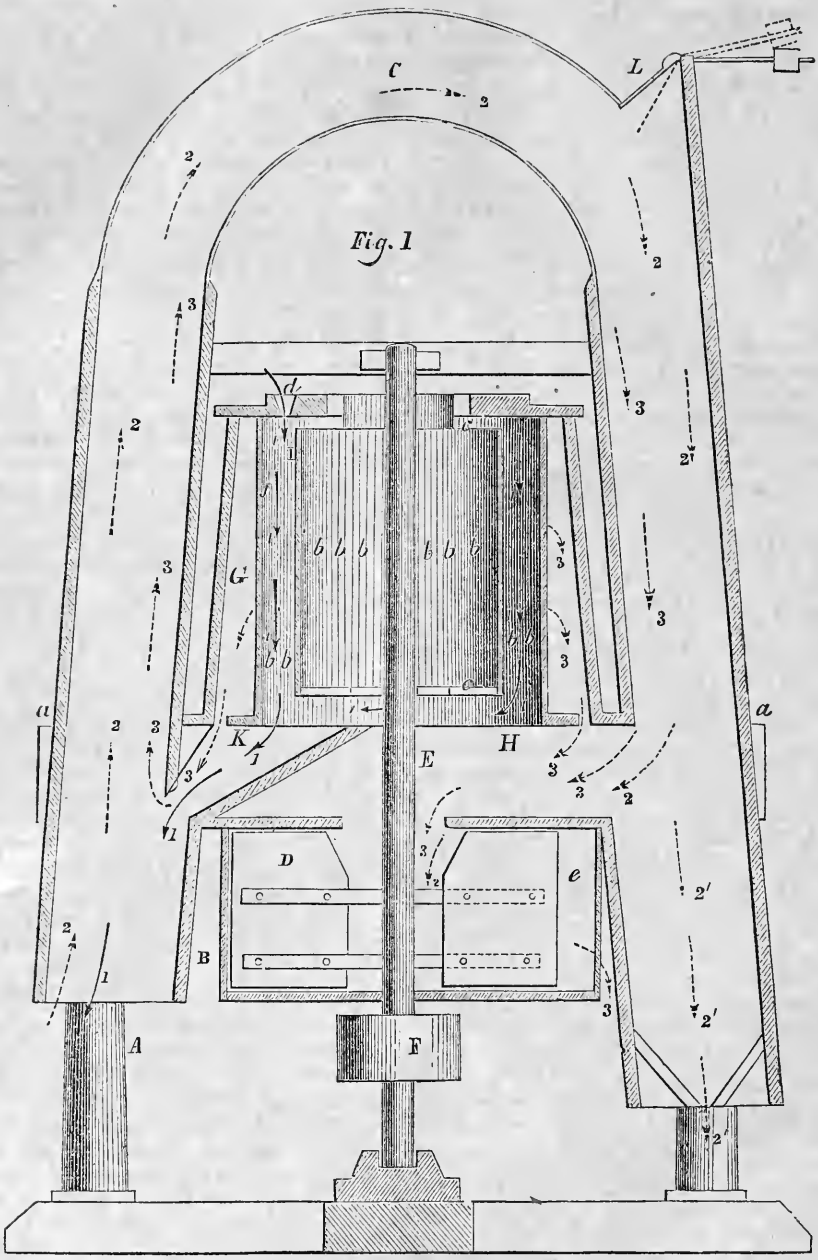
The previous Exhibitions of this Society—at Springfield, Mass., in 1853, and at Springfield, Ohio, in 1854—were eminently successful, and no efforts will be spared to make the present Show, combining as it does, the Four Great Departments of Farming Stock, superior to its predecessors.

The Premium List, with the Rules of the Exhibition will be forwarded to all who will address the President, or Secretary, at Boston, to that effect.

It is earnestly hoped that all Breeders, and owners of Fine Stock will feel it to be a duty, as it certainly is for their interest, to contribute to the Show.

The List of Entries, Exhibitors and Award of Premiums, and all the proceedings of the Exhibition will be published in the Journal of the Society, for 1855. Annual Members of the Society, who desire to receive the Journal, should remember to renew their subscriptions.

MARSHALL P. WILDER, President.
Boston, August, 1855. WM. S. KING, Secretary.



SMUT MACHINES.

As there have been numerous enquiries about smut machines the present season, from various parts of Pennsylvania, we insert the accompanying cuts of what we have been assured combines many advantages over other smut mills, and has been satisfactorily tested in some of the best wheat districts in Ohio. It was patented by John D. Bedwell, October 24th, 1854. The patentee says: "These machines scour the wheat, breaking, pulverizing, and *instantly* withdrawing, at the point where broken, all smut from the wheat while it is *being scoured;* thus effectually preventing discoloration of the blossom end of the berry, as is *always* the case in other machines, should the wheat be damp when scoured. This highly *important* feature it is claimed no other machines possess; hence the decided superiority which they have over all others. They separate from the wheat, and clean all chess and small or shrunk grain, making them fit for grinding into feed; they carry all dust and dirt out of the mill; are simple in construction, and easily kept in order. Another important feature is their great durability."

Every machine is warranted in materials, workmanship, and capacity. They are of four sizes, weighing

from three hundred to one thousand pounds, and cleaning from fifteen to one hundred bushels per hour, and vary in price from $100 to $300. Paschall Morris & Co. are agents for their sale in Philadelphia.

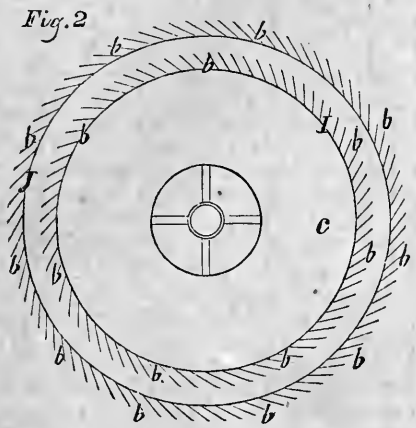


Figure 1 is a vertical section of the machine, and figure 2 is a horizontal section of the stationary and revolving smut cylinders. Similar letters refer to like parts.

A is a frame which supports the several parts of the machine; B is a fan box placed directly under a platform, *a*, of the frame, and C is a curved trunk, one end of which commences near the bottom of one side of the fan box, and passes upward and forms a curve and descends at the bottom of the fan box opposite to the side first mentioned. D is the fan placed within the fan box B, and hung upon a vertical shaft, E. On the lower part of the shaft, E, there is a pulley, F; the shaft, E, extends upward through an air tight box, G, which is placed on the upper part of the platform directly above the fan box, B. The box, G, communicates with the trunk, C, by means of a horizontal passage, H. This passage also communicates with the fan box, B. On the shaft, E, and within the box, G, there is placed a cylinder, I, which is formed of a series of flat metal bars, *b*, secured vertically to top and bottom heads, *c c*. These bars are so attached to the heads, *c c*, as to overlap each other, and the outer edges of the bars in an operating machine, may be about half an inch distant from each other, the space between the bars being sufficiently small to prevent grain from passing through, but at the same time admitting a current of air. Around the cylinder, I, and within the box, G, there is a stationary cylinder, J, constructed precisely similar to the cylinder, I, with the exception that the bars *b*. may be placed closer together, so that the spaces between them are not more than one-sixteenth of an inch apart. The space between the two cylinders, I J, may be about half an inch, and from this space a spout, K, leads into the trunk, C; L is a valve at the upper part of the trunk, C. At the upper part of the box, G, there is an opening, *d*, through which the grain is admitted into the space between the two cylinders, I J.

Operation.—Motion is given the fan, D, and the cylinder, I, by means of a belt passing around a pulley, F, and the grain to be cleansed is poured into the space between the two cylinders, I J, through the opening, *d*, as the cylinder, I, rotates, the smut is scoured from the grain, and pulverized or broken by means of the edges of the bars, *b*, which give a corrugated surface to the cylinders. The fan, D, causes a current of air to pass through the trunk, as indicated by arrows, 2, the grain indicated by arrows, 1, passes from the cylinders down the spout, K, into the trunk, C, where it is subjected to the blast which carries upward in the trunk, the smut, dirt, chess, etc., indicated by arrows, 3, and the grain separated from impurities falls from the trunk. Certain portions of the smut and dirt also pass through the cylinder, I, and is drawn down into the fan box, B, by the action of the fan, and forced out a passage represented by *e* at the side of the fan box. The portions of smut, dirt, chess, etc., that followed the grain into the trunk, are carried over the curve at the upper part of the trunk, and the smut, dirt, and light particles are drawn into the fan box, B, at the connection of the passage, H, with the trunk, while the heavier substances of some value, such as chess, light grain, etc., see arrows 2, will resist the power of the current, and fall from the spout at the end opposite to that from which the perfect grain passed. By regulating the valve, L, at the upper part of the trunk, C, the blast or current within said trunk may be increased or diminished, as desired.

This valve is to obviate any evil from excess of fan motion; it is self-adjusting, and opens by outside atmospheric pressure, and suction draft along the trunk, C, so that when the blast is too strong, and carries over wheat, by giving the movable screw weight on the end of the lever of the valve, L, a few turns, it is brought nearer the valve, and allows of its being opened by excess of blast, to prevent the wheat being carried over.

Mode of using Guano.

Should Guano be ploughed or harrowed in? Should it be mixed with plaster, previous to sowing, or spread by itself? These are matters on which a difference of opinion exists among practical farmers, resulting we think partly from the different circumstances under which experiments have been made.

We have known three hundred pounds of Guano applied to the surface of grass lands, with the happiest results, but the benefit was owing to its being sown immediately preceding a fall of rain, or subsequent spell of wet weather. This, with the consequent rapid growth of grass, prevented the loss of its ammoniacal constituents by evaporation and exposure. Still we would not from such an experiment say, that Guano should always be spread on the surface.

For the same reason, simply harrowing it in is often sufficient, particularly in heavy or retentive soils; but we would recommend whenever it is thus covered, or spread on the surface, it should previously be mixed with plaster, one part of plaster to two of Guano. The sulphuric acid of the plaster, uniting with the ammonia of the Guano, forms the non volatile sulphate of ammonia, which if not so immediately active remains longer in the soil, and produces more lasting and permanent benefit.

Where the Guano is immediately ploughed down as *we* think it always ought to be, and we do not care how deep, this previous combination with plaster, charcoal,

peat, &c., to absorb the ammonia is not so necessary. Its own tendency to rise, will cause its distribution through the surrounding particles of soil, and immediate availability to the roots of growing crops. When ploughed down, even when subsoiling was performed at the same time, we have known of its effects to be perceptible for years, and we would greatly prefer three hundred pounds of it to the acre thus applied, for the wheat or indeed any other crop, than double the ordinary quantity of such exhausted, sun-dried, chaffy looking stuff, called barn yard manure, which we have recently seen hauled into the fields. Our practice in respect to the application of manure, must be changed, and we are glad to see each year an increase of the number of farmers who are being satisfied on this point. Manure should all be hauled out in the spring for the corn crop, which is a gross feeder, and requires exactly that kind of food, while the wheat crop, if it requires anything, can be supplied with Guano. Better crops, both of corn and wheat, and a far more improved condition and fertility of soil, will result from this system.

An opinion is sometimes expressed that Guano impoverishes land, and such a result is said to have actually occurred in many parts of Maryland and Virginia, where its first effects were so remarkable, but the crops have since been diminishing in quantity, till its application is no longer profitable. This is easily explained. The lands in those districts have long since been exhausted by excessive cropping with corn, tobacco, &c., without anything being returned. Grain crops and especially wheat, require nitrogenous manures, and there is no form in which nitrogen can be so readily supplied as in ammonia, the active principle and most important constituent, not only of Peruvian Guano, but of *good* barn yard manure. Plants like animals require a *variety* of food, and if their inorganic elements, such as silica, potash, phosphoric acid, lime, &c., are not present in the soil for chemical combination, and to form what may be called the *material* of the plants, of course no crop can result. Plants are found on analysis to contain not one, but several constituents. These differ in their relative proportions, but are each essential to its perfect growth and maturity. A long continued practice of applying Guano *only* does not of itself impoverish, but impoverishment results from depending on it alone and the other necessary ingredients in the soil with which it should combine, being exhausted and not being supplied. The use of lime, ashes, ploughing down green crops, like clover, &c., would no doubt soon bring the Guano again into activity.

To Destroy Insects.

In the winged state, most small insects may either be driven away by powerful odors, or killed by strong decoctions of tobacco, or a wash of diluted whale-oil or other strong soap. Attention has but recently been called to the repugnance of all insects, to strong odors, and there is but little doubt that before a long time, it will lead to the discovery of the means of preventing the attacks of most insects by means of strong smelling liquids or odorous substances. The moths that attack furs, as every one knows, are driven away by peppercorns or tobacco, and should future experiments prove that at certain seasons, when our trees are most likely to be attacked by insects, we may expel them by hanging bottles or rags filled with strong smelling liquids in our trees, it will certainly be a very simple and easy way of ridding ourselves of them. The brown scale, a troublesome enemy of the orange tree, it is stated in the *Gardener's Chronicle* have been destroyed by hanging plants of the common chamomile among its branches. The odor of the coal tar of gas works, is exceedingly offensive to some insects injurious to fruits, and it has been found to drive away the wire worm, and other grubs that attack the roots of plants. The vapor of oil of turpentine is fatal to wasps, and that of tobacco smoke to the green fly. Little as yet is certainly known respecting the exact power of the various smells in deterring insects from attacking trees. What we do know however, gives us reason to believe that much may be hoped from experiments made with a variety of powerful smelling substances.

Tobacco water, and diluted whale-oil soap, are the two most efficient remedies for all the small insects which feed upon the young shoots and leaves of plants. Tobacco water is made by boiling tobacco leaves, or the refuse stems or stalks of the tobacco shops. A large pot is crowded full of them, and then filled up with water, which is boiled until a strong decoction is made. This is applied to the young shoots and leaves with a syringe, or, when the trees are growing in nursery rows, with a common white-wash brush; dipping the latter in the liquid and shaking it sharply over extremities or the infested part of each tree. This, or the whale oil soap suds, or a mixture of both, will kill every species of plant lice, and nearly all other small insects to which young fruit trees are subject.

The wash of whale oil soap is made by mixing two pounds of this soap, which is one of the cheapest and strongest kinds, with fifteen gallons of water. This mixture is applied to the leaves and stems of plants with a syringe, or in any other convenient mode, and there are few of the smaller insects that are not destroyed or driven away by it. The merit of this mixture belongs to Mr. David Haggertson, of Boston, who first applied it with great success to the rose slug, and received the premium of the Massachusetts Horticultural Society for its discovery. When this soap cannot be obtained, a good substitute may be made by turning into soap, the lees of common oil casks, by the application of potash and water in the usual way.

Moths and other insects which fly at night are destroyed in large numbers by the following mode, first discovered by Victor Adouin of France. A flat saucer or vessel is set on the ground in which is placed a light, partially covered with a common bell glass besmeared with oil. All the small moths are directly attracted by the light, fly towards it, and, in their attempts to get at the light, are either caught by the glutinous sides of the bell glass, or fall into the basin of oil beneath, and in either case soon perish. M. Adouin applied this to the destruction of the *pyralis*, a moth that is very troublesome in the French vineyards; with two hundred of these lights in a vineyard of four acres, and in a single night, thirty thousand moths were killed and found dead on or about the vessels. By continuing his process through

the season, it was estimated that he had destroyed female moths sufficient to have produced a progeny of over a million of caterpillars. In our orchards, myriads of insects may be destroyed by lighting small bonfires of shavings, or any refuse brush; and in districts where the apples are much worm-eaten, if repeated two or three nights at the proper season, this is a very efficient and cheap mode of getting rid of the moth which causes so much mischief. Dr. Harris, knowing how important it is to destroy the caterpillar in the moth state, has recommended flambeaux, made of tow wound round a stake and dipped in tar, to be stuck in the fruit garden at night and lighted. Thousands of moths will find a speedy death, even in the short time which these flambeaux are burning. The melon-bug may be extirpated by myriads in the same way.

A simple and most effectual mode of ridding the fruit garden of insects of every description, which we recommend as a general extirpator, suited to all situations, is the following. Take a number of common bottles, the wider mouthed the better, and fill them about half full of a mixture of water, molasses and vinegar. Suspend these among the branches of trees, and in various parts of the garden. In a fortnight they will be found full of dead insects, of every description not too large to enter the bottles—wasps, flies, beetles, slugs, grubs, and a great variety of others. The bottles must now be emptied, and the liquid renewed. A zealous amateur of our acquaintance, caught last season in this way, *more than three bushels* of insects of various kinds; and what is more satisfactory, preserved his garden almost entirely against their attacks in any shape.

The assistance of Birds in destroying insects should be duly estimated by the fruit-grower. The quantity of eggs and insects in various states, devoured annually by birds, when they are encouraged in gardens, is truly surprising. It is true that one or two species of these, as the ring-tail, annoy us by preying upon the earlier cherries, but even taking this into account, we are inclined to believe that we can much better spare a reasonable share of a few fruits, than dispense with the good services of birds in ridding us of an excess of insects.

The most serviceable birds are the common sparrows, the wren, the red-breast, and, in short, most of the birds of this class. All these birds should be encouraged to build nests and inhabit the fruit garden, and this may most effectually be done by not allowing a gun to be fired within its boundaries. The introduction of hedges or live fences, greatly promotes the domestication of birds, as they afford an admirable shelter for their nests. Our own gardens are usually much more free from insects than those a mile or two distant, and we attribute this in part to our practice of encouraging birds, and to the thorn and arbor vitæ hedges growing here, and which are greatly resorted to by those of the feathered tribe which are the greatest enemies of the insect race.

Among animals, the *toad* and the *bat* are great insect destroyers. The common bat lives almost entirely upon them, and in its evening sallies devours a great number of moths, beetles, weevils, etc.; and the toad quietly makes way with numberless smaller insects.—*Downing.*

Comparative Value of Ox and Horse Labor.

The question of the comparative value of ox-labor and horse-labor, however, is a very complicated and difficult one; and has been keenly discussed by some of the ablest continental writers on rural economy; and, even when thoroughly understood and perspicaciously investigated, must be variously determined according to circumstances. Burgar says, "We must take into consideration the amount of labor which horses and oxen can perform, in a given period, if we would decide respecting the one or the other. Because horses perform more in the same time than oxen, and are better adapted for many kinds of work; so it not rarely happens that labor is carried on cheaper with horses; a person gains more in the less number of the horse-teams and the men required for them, compared with the greater number of the ox-teams, than the cost of their keeping, and the interest of the out-lying capital. If the ox-team in a given time performed as much work as the horse-team, it would unquestionably be cheapest to use them for all the work of the farm, and quit the use of horses wholly; but because oxen are much slower in drawing, and a yoke of them, if they are strong and well trained, will accomplish in favorable circumstances only $\frac{3}{4}$ or $\frac{1}{2}$ of what a good span of farm-horses will; therefore if the keeping of oxen is not unusually cheap, on account of the increased number of teams and of men required to take care of them, there will be greater expense with oxen, than with horses." Thaer says, "Horses have an undeniable preference in the following particulars:—1. They are suitable for all and every kind of work of land-husbandry, in all ways and in all weathers. One, therefore, when he keeps only horses, is not obliged to choose out work for them, but can use his whole team for any business that occurs, and leave no part of it to stand still. 2. They accomplish every kind of work more rapidly, and are more constant. One can, therefore, not only complete the work in the same time more promptly, but also require a longer day's work of them. Thus the waggon will accomplish more with an equal number of horses than with oxen; although with the usual draught of a load they exert not more power than oxen, yet they overcome by their rapidity of motion and energy, many a short resistance before which oxen stand still. In favour of oxen are the following:—1. They perform the greater part of the works on a farm, as ploughing, and the near carrying of loads, as well as horses do; and one can in a usual day's work, if they are well fed, expect nearly as much from them. They perform the work of plowing in a certain degree better than horses. 2. The cost of them is considerably less. Their purchase, on an average, is not near so high; their harness is much cheaper; their food costs much less, and consists in such things as, on account of its transportation, are not so marketable as the grain, on which horses are kept. 3. What is an important particular is, that, if they are well taken care of, and not too long kept at work, they lessen not as much in value, but improve for the most part; so that they often sell for more than they at first cost, and thereby soon pay the interest on the standing capital; whereas, on the other hand, the value of the horse soon sinks to nothing, and the capital is wholly exhausted. They are also subject to fewer haz-

ards and casualties. 4. They demand less attention, as one ox-herd can take care of 30 oxen, if others work with them by change. Finally, they give a greater quantity of excrement, which in general affords a more productive manure than that of horses. Such horses and oxen must be compared, the relation of which in respect to their condition and care, are not unlike, &c. There can, therefore, be no doubt, that those labours which can be proportionally well performed by oxen, will be done cheaper with oxen than with horses. If a farm had only such work to be done as is convenient for oxen, and it could be executed with allowing time to rest, &c., then oxen should be used. But if, according to recent experiments, another fodder can be introduced for horses than corn, and thus the expense be lessened, then the question between horses and oxen would probably stand differently."—*Rural Cyclopedia.*

The Hessian Fly and the Midge.

[The following brief but comprehensive article by Prof. Dewey embraces a very succinct account of these insects. As the subject is, just now, one of great interest to thousands of rural readers, we give the article the prominence to which it is entitled.—ED. R. N. Y.]

Both these insects have attracted much interest for a few weeks past, as they are voracious destroyers of wheat. Much effort has been necessary to ascertain satisfactorily the history of these depredators on one great necessary of life. It seems to be proved that they are old and well-known insects of Europe, and have the same character there and here.

The Hessian fly was introduced into our country in 1776, by the Hessian troops who were landed on Long Island. In a few years their depredations on wheat fields were obvious, and have been well known since, till the insect has spread far and wide over the land. The Hessian Fly lays it eggs near the root of the wheat in autumn, and the maggot which soon is hatched, takes its residence just above the lower joint of the stalk, causing it to enlarge and yield its nutritious juice to the animal. Though the stalk grows in the spring, it is sickly, becomes weak and wrinkles down, and bears no fruit. In due time the maggot becomes a chrysalis, like a flax seed, and changes into a fly, whose body is about one-tenth of an inch long, and whose wings expand about a fourth of an inch. So small and insignificant is the animal, which is produced in such multitudes as to blast the harvest hopes of the husbandman entirely, and expose him to the desolation of a famine. Several destroyers of the maggot are provided by a kind Providence, by which the creature is destroyed, and the field of wheat is left uninjured. It is said that two crops of this insect are produced in a year.

The Hessian Fly belongs to the order *Diptera*, or two-winged, and has the very musical and expressive name of *Cecidomyia destructor* the *destructive gall-fly*. The common name, Hessian Fly, is its accepted designation.

The *Midge*, or Wheat Gnat, is another insect, destructive to wheat. It has the name of *Cecidomyia tritici*, meaning *gall-fly of wheat*. This also is a small insect, about the size of the Hessian Fly, and often appears in great numbers on the heads of wheat. Its object there is, to lay its eggs at and upon the young seed or wheat. These they soon hatch into a maggot, which devours the seed and cuts off the crop. In due time, the maggot becomes transformed into a yellow chrysalis, falls to the ground and lies until the next season, and then the shell is burst, and the midge or gall-gnat flies forth to its work of propagation. The destruction falls directly on the seed in the head of wheat, and the yellow chrysalis or pupa is to be seen at and before harvesting in the wheat heads. The maggot is not able to eat through the hard covering of the wheat seed, and cannot attack ripe wheat; and hence its destructive power operates before the milk changes into a solid form.

This Midge is often called the "Weevil," but this is an improper naming. The weevil belongs to another family of insects, of *beetle kind*, and is able to eat ripe and hard grains. The "rice-weevil" is one of the kind, named *Calandra oryzæ*, which eats the ripened and hard rice, and also devours "stored" Indian corn. It is said that a similar weevil has been found to eat the hard seed of wheat, but too little is known of it or its ravages to be of importance now. At any rate, they are very different from the Midge, now in the heads of wheat. It is desirable to use as definite names in common language as possible. Hence the names above. To call one the wheat fly, marks no difference, for both are flies or gnats, and both destroy wheat. The Hessian Fly might be named "Wheat-Stalk Fly," and the Midge, "Wheat-Head Fly," to designate an important fact and difference. C. D.—*Rural New Yorker.*

More Evidence in Favor of Gas Lime.

MR. EDITOR:—My limited experience, in the use of refuse lime from gas works, as a manure, is much more in accordance with Mr. Maxwell's views than yours, and for the following reasons.

In the spring of 1853, a lot in this vicinity was filled up some two feet or more, with earth from a hill side, and was covered with grass sods, without any soil or manure of any kind, being put beneath them—the grass was watered occasionally, during the dry hot season, but presented a very sickly appearance.

In the autumn of that year, it was covered with refuse lime from the gas works, and during last summer, it produced a most luxuriant growth of green grass, [Poa pratensis] and now, without any other application, is as pretty a sod, as any one need wish to see.

In consequence of this experiment, I covered my own grounds, last fall with it, and notwithstanding the cold backward season, I had on the 14th inst., a stout swarth taken from them, the grass being of a much deeper, and more healthy green than heretofore. I have also tried it in compost, with sufficient encouragement to repeat the trial, but it is more difficult, to form a correct judgement of its effect when combined with other manures, than when it is applied *per se.*

I have seen no analysis of the refuse lime, produced by the gas works at this place, but that it does contain, as suggested by the Agriculturist, a large per centage of caustic lime, (hydrate) I think may be shown, by stating the process adopted at the works. I am told the custom is, to remove the lime, many hours before it is saturated, with the impurities it is intended to arrest. Is not the effect of this, to leave a large per centage not saturated,

and consequently caustic. Again, according to Prof. Johnson's analysis, as quoted by Mr. Maxwell, *more* than one-half is carbonate of lime, *about* one-fifth is sulphate of lime, and three per cent, alumina and oxide of iron, here then we have *about* seventy-five per cent. of vegetable stimulants. I think it probable that much of the caustic or kiln lime, used as a manure by our farmers, does not contain much more of the essential stimulants, than this sample.

The transition limestone, that abounds in this vicinity, contains, in some localities, thirty-six per cent. of impurities, chiefly magnesia, which is obnoxious to vegetation. Now as I presume they use stone lime in the gas works at Toronto, may not the samples, used by the intelligent gentleman of whom you speak, have been of this character, and not rendered worthless comparatively, by passing through the gas works.

The sample analysed by Prof. Johnson, as quoted by you, must necessarily have contained a large excess of water, as it is used by the gas manufacturers, in the form of hydrate, otherwise it would not have been one-half water.

The mode of managing the lime here, I believe, is, to put it under cover after it has been used in the purification, and allow any excess of water it may contain to pass off, and so great is the demand for it, that the orders from the farmers are sometimes many months in advance of the supply, and so fully are they convinced of its value, that they pay six and a fourth cents per bushel, and haul it five or six miles, when they can purchase the fresh or kiln lime for ten or twelve cents.

As an evidence, that they are not behind their neighbours in the proper management of their farms, their beef is much sought after, and commands the highest price in the metropolis of New York, as their butter does in the cities of Baltimore and Washington, this I have heard them attribute to the superior pasture afforded by the green grass, the growth of which appears to be much promoted by this "vile refuse which should be buried many fathoms deep, in some barren region." Let us not, Mr. Editor, condemn it *nolens volens* as Dr. Ure appears to have done, but give it a fair and impartial trial, and if it should then be found to be worthless, reject it, and "strike it from the list that promises well." M., West Chester, Pa.—*Horticulturist.*

For the Farm Journal.

Agricultural Botany.

BY HARLAND COULTAS. PROFESSOR OF BOTANY IN THE "WAGNER FREE INSTITUTE OF SCIENCE," PHILADELPHIA.

No. 1

There is no profession more important than that of Agriculture. On the skilful preparation of the soil depends its productiveness, the riches of States, the prosperity of commerce, and the welfare and development of nations. Agriculture, in common with other branches of art, may be practised without any philosophical knowledge of its theory; established practices may be imitated, and the ordinary routine of operations about a farm may be conducted with the usual results. Under such circumstances the progress of improvement must however necessarily be very slow. The mere routine practitioner has no resources in cases of difficulty but ordinary expedients, and if these should fail him is compelled to desist from any further attempt; for efforts made at random without that discrimination which a scientific knowledge of the subject imparts are of little avail. It is otherwise with the man of science who referring effects to their true causes, at once skilfully selects the appropriate measures, when the usual plan does not succeed. He exercises not only his muscle but his intellect, and is thus able to bring about those results which are desirable, in cases where his less philosophical neighbor encounters difficulties which are absolutely insurmountable.

If the farmer would obtain the greatest possible yield from his land, he must endeavor to find out the causes which produce the various effects, with which experience has rendered him familliar. It is not sufficient that he acquires a knowledge of the facts connected with the various agricultural operations about his grounds, he must study their philosophy, and for this purpose a knowledge of Natural Philosophy and Chemistry, and the different branches of Natural History, especially Botany, must be acquired.

Vegetables are in fact the most important product of the farm. On their skilful cultivation every thing else depends, whether we consider them as food for man or domestic animals. Is it not important that the Agriculturist should be able to distinguish scientifically the useful from the hurtful plants growing on his farm, so as to be able the most effectually to promote the growth of the former and to extirpate the latter? To this end some notions of botany are absolutely indispensable.

If we plant a seed in the ground, it grows from the very commencement of vital motion in two opposite directions, upwards into the atmosphere and downwards into the earth; the two grand sources from whence it obtains the materials which contribute to its future growth. We may consider a plant then as a vegetable axis or stem, more or less ramified at its two extremities. That portion of the stem growing into the atmosphere puts forth from its branches during the season of vegetable activity certain flat, dilated organs, which we call leaves, the surface of which is porous and by means of which food is absorbed from the atmosphere. That portion of the stem which ramifies in the ground, on the other hand, becomes covered about the same time with numberless delicate white fibres, which are the true roots of the plant. These correspond to the leaves on the branches. performing the same function, that of absorption, and like the leaves decay and become detached from the plant in autumn. On the return of spring, the underground and atmospheric ramifications of the plant are again re-clothed, the former with fibres and the latter with leaves.

It is a mistake to suppose that *all* the underground portion of a plant is the root. The white delicate fibres put forth in early spring at the time that the leaves grow on the branches in the atmosphere are the true roots; they contribute to the extension of the subterranean *branches* by the food which they absorb from the soil, exactly as the leaves induce a growth of the branches in the atmosphere by exercising the same function. A fibre and a leaf are wonderfully different in form and color, yet both are absorbents, beautifully adapted to the media in which they develop.

The farmer will now see the propriety of transplanting

either in the fall after vegetable growth has ceased, when the fibres are dead and torpid, or in *early* spring before the season of growth has fully commenced and the fibres have been renewed. Transplanting at any other time is always attended with consequences more or less injurious and ought never to be attempted when the plant has got its growth and is beginning to put forth its flowers. It has then arrived at an adult state and is about to exercise its reproductive functions. At this critical period of its life it is better to let it alone.

As soon as the seed begins to germinate, the first thing that we notice is the softening and swelling of its envelopes; its testa or outer covering is ruptured, and the embryo elongates downwards by its radicle or young root, and upwards by its plumule or young stem, lifting the cotyledons or seed leaves above the earth's surface. These seed leaves when exposed to the light speedily acquire a green hue, and in dicotyledonous embryoes ultimately assume the form of two opposite leaves, which are somewhat thick and fleshy, the margin of which is invariably entire, and which are so altered in appearance as to be altogether different from what they were when they were wrapped up within the folds of the testa. If a plant has but one of these leaves it is called a *monocotyledon*, if it has two, a *dicotyledon*. Plants that spring up without these appendages are called *acotyledons*. These latter develop not from seeds but spores, of which the fern is an example.

The cotyledonary leaves attached to the embryo contain a store of starch, which contributes to the development of the first pair of atmospheric leaves and also to the extension of the root in the soil; hence, at the end of a certain time they fade and fall, having discharged their allotted functions. The second pair of leaves take the form peculiar to the plant and remain permanently attached to its stem; as they aerate the fluid absorbed into the interior of the plant by the radicles, and which is called sap, much more perfectly than the cotyledonary leaves did, the growth of the plant is necessarily more rapid.

It is important then to take all possible means of favoring the growth of the second pair of atmospheric leaves. As the power of absorbing food from the atmosphere and soil increases with every fresh growth of leaves and fibres, and is necessarily very feeble in the beginning, when the plant is in the cotyledonary stage of development, it is obvious that the beds must be kept carefully weeded, and where the young plants are very much crowded together the feebler must be removed in order to encourage the growth of such as are more vigorous.

It is necessary also that the soil be rendered light and porous. Carbonic acid is the principal constituent in the organization of plants; it composes more than one-half of their entire bulk. The food of plants in fact mainly consists of carbonic acid. Now the atmosphere is not the only source from whence they obtain it. The soil also contains an immense quantity. The substance called humus, which gives the dark color to soils, and is known to gardeners as mould, is composed principally of organic matter in a state of decay, for the most part of woody fibre, which uniting with the oxygen of the air, forms carbonic acid.

Decay, as Liebig has shown, is only a process of combustion or slow burning. An atmosphere of carbonic acid surrounds every particle of decaying humus and in proportion to its presence in soils, are they fertile or otherwise. In spring before the leaves are fully developed, plants obtain their carbonic acid mainly from the soil. By loosening the soil about the young plant, if it should have become indurated, we favor the access of the air, the formation of carbonic acid about the roots, and consequently, the growth of the plant when it most needs assistance.

Agricultural Implements.

ED. FARM JOURNAL:—I have more than once been tempted to address you a query in regard to the use of agricultural implements, but have been deterred by reasons which it is not necessary should be presented at this time. For some years I have been a tolerable close observer of agricultural machinery, and always an admirer of every thing ingenious and useful. In the course of my observations, I have been forcibly struck with the apparent difference in the working qualities, durability, &c., of machines of the same kind turned out by the same manufacturer. For instance, I have seen two mowing machines made by the same person, and so much alike in all their parts, that the closest scrutiny was not sufficient to enable me to detect the slightest difference between them. These machines were purchased by two farmers who were adjoining neighbors, and whose grass crops were as nearly alike in quality as the two mowers. As it happened they were put to work in weather decidedly favorable to both, and yet, one worked well, and gave entire satisfaction to the purchaser, while the other was pronounced worthless from the very word, go! Why this should be so, I could not for the life of me understand at the time; but subsequent information revealed the truth and satisfied my mind upon one point, at least, which was, that farmers are as frequently to blame for the failures of their machines in durability and working as the builders of them.

In the case above referred to, the owner of the machine which worked well was a careful and observant man. His first step when about to start his machine, was to examine every nut connected with the working part of it, and which by getting loose could possibly injure it. The knife had been previously examined, and whetted to a fine keen edge. Every journal box was well oiled and every part of the machine about which there was any friction received like attention. The result of this care was, that the machine worked as well as could have been desired.

The course pursued by his neighbor was almost precisely opposite. Taking it for granted that every machine came from the shop in prime apple pie order, ready for work, the idea of oiling, examining the nuts, or seeing to the condition of the knives, never entered his mind. His horses were hitched to the machine, and with a flourish of his whip, were started off in dashing style, only to be brought to a dead stand before they had advanced a rod. The machine was choked, and more than this, the application of the whip to the horses made them give a sudden start, by which an important working part was strained badly. Without a single in-

quiry as to the cause of the choking, the machine was backed, and a fresh start taken. The whip was again applied to the already restive horses, and the mower with its dull knives, unoiled journals, &c., was brought up against the heavy standing grass with all the impetus which two powerful horses could give to it. It is scarcely necessary to state the result. The eye by which the knife is connected with the pitman rod gave way, and further operations were stopped until it could be repaired. Now this was only the first trial. A second and third succeeded, with the same preliminaries, and of course with the same results, and the finale of the whole matter was, that the mower was returned to the manufacturer, broken and worthless, with the announcement from the purchaser that it was not worth a cent; that the bolts were good for nothing and that the whole machine was a humbug.

Is it to be wondered at, that in the hands of such men, machines fail, and manufacturers lose reputation, I have known instances in which just such men have purchased mowing machines, started them in the same manner and thrown them aside as worthless. At the close of the season, they sold them for less than one-third their original cost. And I have seen these same machines in the hands of their new purchasers, without any alterations other than repairs of breakage, made to work in the most satisfactory manner.

With such facts and many others of a similar character before us, there is little need of the inquiry which I purposed propounding. The question is answered before it is asked, and the moral of the whole matter is, that farmers as a general thing are not sufficiently careful in the use of their farm machinery. That manufacturers are frequently to blame I admit, but it is very apparent that much vexation, trouble and expense would be saved the purchaser if in the first starting of machines, he would see that every nut was well drawn and every working part well oiled, and (where knives formed a part of the machine) the edges were well whetted.

WHETSTONE.

A Word in Defence of Italian Rye Grass.

Mr. J. L. Darlington:—In the July "Farm Journal," Mr. John W. Gibbons has an article devoted *principally* to denouncing the famous Italian Rye Grass; one of the most popular grasses in Great Britain and Ireland; and I might say *universally considered the best!*

Now this Mr. G. must have been sadly imposed upon, or else he is unreasonably ignorant of the subject on which he writes. This grass is well known to be the sweetest and best, either for pasturage or hay, to be found—cattle of all kinds prefer it to any other variety.

I will give you a few *noted facts* concerning it, where it was grown on my father's farm, of late years, to the exclusion of all other kinds. The first experiment was made with a small quantity of seed, which partly sowed a field, the balance, (about one half), being sowed with clover. Early the following year a heavy crop of hay was taken off, and in the course of two weeks the cattle (about ten head), were turned into a luxuriant second growth. On this they feasted, and continued to do so until it was cropped as "bare as your hand"—not the clover my dear sir, *but the Italian Rye Grass*; and *that alone* did they eat as long as they could collect a mouthfull! The fact soon became notorious in the neighborhood, and the demand for seed was without a parallel. Another fact.—A field of bottom land yielded four heavy cuttings of hay!—two of which were ripened for the sake of getting the seed. The fifth crop, into which the cattle were turned, would have yielded another good crop of hay; and all these *five cuttings in one season*, without anything more than ordinary labor. I could cite other facts in favor of this valuable variety of grass, but I think further remarks unnecessary.

I would be gratified to hear from some of our friends, who have experimented with the Italian Rye grass in this climate, relative to their success or failure. Your correspondent who is an ardent admirer of the noble agricultural science, has not a rod of ground to cultivate, or he would certainly test its value.

Pittsburg, July, 1855. Yours truly, N. G. Mc.

Oiketicus.

J. L. Darlington Esq.:—Dear Sir:—The insects you had the goodness to leave at my office on the 3rd inst., are the larvæ of a moth belonging to the Genus Oiketicus; you doubtless have observed the Cocoons of these insects hanging by dozens on almost all kinds of fruit and shade trees during the winter and spring months; they are much more abundant now than they were formerly in this section of the country. I have marked with regret their steady increase for the last fifteen years. These caterpillars belong to a family of moths, called Psychada; the caterpillars of which feed on the leaves of trees and shrubs, and conceal themselves in oval silken cocoons covered on the outside by bits of sticks or leaves; the insect never leaves his domicil, but bears it about with it as a defence or concealment from enemies; from this peculiarity they have received the name of Sack-bearers and Basket-carriers from the shape and appearance of the cocoons of the different species. These caterpillars when about to undergo their metamorphis, attach one end of their cocoon by a web of silk to a twig, while the other end is free and but slightly closed to admit of the more ready exit of the moth. The female is wingless, and deposits her eggs before leaving the cocoon, and in many instances when I have examined the cocoons the females had died within them after having deposited a vast number of small green eggs; according to some writers the females of this genus produce fertile eggs without fecundation.

I will but add that you can easily rid your trees of the cocoons during the winter and spring months by means of a spring knife and rope fastened to a long pole, taking care to burn them when gathered. For a more detailed account of the habits and transformation of this family of moths, I refer you to the excellent treatise of Dr. Harris. Yours, respectfully, W. D. HARTMAN.

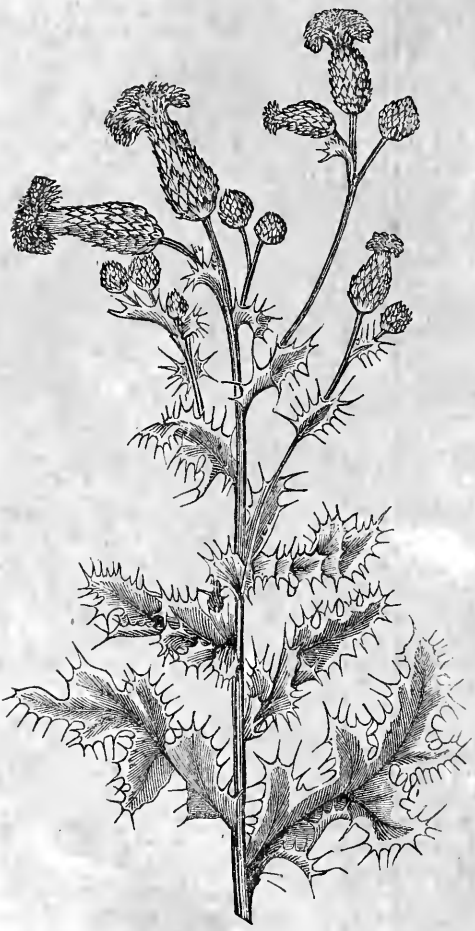
West Chester, August 5th, 1855.

Crops in Western Pennsylvania.

Mr. J. L. Darlinglon:—Dear Sir:—I hereby send you one dollar for the Farm Journal, and desire you to send me the July No. if you have any on hand. I would have forwarded it sooner, but was in hopes that a club would have been raised at this office. The folks here

have but little faith in Agricultural papers; some of them will not even read them, let alone pay for them; and nearly every one believes in the transmutation of plants. such as that wheat and barley will turn to cheat; cheat turn to timothy; spring barley turn to oats, &c.; you will not now be surprised that they do not take the Farm Journal. If I had time I should like to let you know how we do up farming here, and account for the "freaks of nature" as we mostly call them. However, we have got along pretty well so far this year. Crops very good; wheat as good as I ever saw; rye the best of all, more sown than has been for the last five years; and put all together, I could send you a bunch of it, the product of one grain, numbering fifty-seven stalks, averaging sixty grains to the stalk; corn, more planted than usual, looks very good; oats and barley, one-half down flat, and hard to cut; grass, good; fruit of all kinds abundant and of extra quality. I am afraid my communication will weary you. Yours, SAM'L. MELONEY.

Clinton, July 17th, 1855.



CNICUS ARVENSIS.---CANADA THISTLE.

Some time since, a correspondent desired to know the peculiar appearance of the Canada Thistle, inasmuch as never having seen the plant, he could not be sure of recognizing it when he should see it. That is a happy ignorance, and he may congratulate himself if it shall forever continue. There are people and things in this world with whom acquaintance is not desirable, and the Canada Thistle may be safely reckoned as one of them.

Nevertheless it may be of consequence to know how the thing would look were we to see it, especially if there is danger that at some time we may, against our will, be introduced to it. With such a notion we introduce to our readers this old pest of Vermont and the Genessee Valley of New York.

It is not a worse looking thistle than many others. Taken individually, it is not worse and would it be content to grow by itself, now and then a plant here and there about the wayside, and up and down in neglected fields, it might be safe to despise and let it alone. But it is too ambitious a plant for that. It must grow everywhere. It must fill all the fields into which it can get a foothold. It must overrun the pasture; it must fill the meadow; it will overtop the oats; it will contest supremacy with the rye; it will fight for equality with the corn; it must be everywhere like David Jones' yellow dog, and everywhere it must be disagreeable. It is as hateful as a Maclura hedge and nowhere as beautiful, and not by a thousand times as safe; and as to *use*, it has none whatever. You cannot touch it or be among it with either comfort or safety. Green or dry, dead or alive, it is the same uncomfortable enemy.

The Canada Thistle is propagated in two ways. First it spreads by *stolons*, that is, it puts out runners just like a strawberry plant, with the difference that the thistle runners run underground; and every now and then a root is put down; and where the root goes *down*, a stalk springs *up*. This goes on indefinitely, and you can never be sure you have eradicated the plant till you know you have destroyed all those stolons or infant roots, for though you kill the old plant, the young ones may have got a foothold, and will grow in spite of it. Next, it propagates by seed. This is matured in bountiful quantities, and each seed is provided with a kind of balloon apparatus like any other thistle seed, or like that of the Dandelion, by which it is buoyed up in the air and floats about wherever the wind carries it, till it gets tired of floating or its parachutes get broken. A few plants therefore will seed a neighborhood; a neighborhood will seed a district, and a district will seed a State.

It is a dreadfully accommodating plant, that is, it accommodates itself wonderfully. Give it a good clean soil, and it will grow up thick, stout, straight and tall, like a parcel of fire or horse weeds. Keep it in the grass, and it will trail modestly about, with a few crooked and struggling stems, as if it deemed itself unworthy to live but with the violets or other paragons of modesty. It is as we say here in the west, "all kinds of a plant.

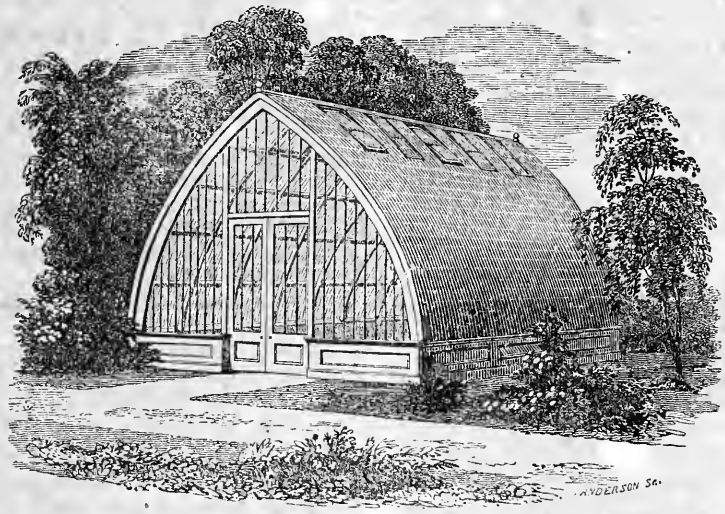
Friends, do you want it on your farm? If you do, *neglect it.* You need not desire it, you do not need to run after it; it will come to you very likely, and once with you it *will stay*, however bad you wish it were gone; provided you do not root it out, by the most determined and energetic action. The first plant of it must be dug up and kept dug up, the thing being done ten times in a season if needs be. It cannot live if it

be suffered to have no leaves, since they are its lungs; and if kept extirpated it must die.—*Prairie Farmer.*

Italian Rye Grass.

We have no doubt our correspondent in another column has made the same mistake as many others, by confounding the names of English Perennial Rye Grass and Italian Rye Grass. The former is much cultivated and very favorably known in some sections of the United States *under the name of the latter.* In our March number, pages 82 and 83, we wrote an editorial on rye grass, giving some account of the different varieties most esteemed in England, and also spoke of the Italian rye grass (Lolium Italicum), and how it was to be distinguished from the English (Lolium Perenne), by always having an awn or beard on its lower paleæ.

We often hear complaints about hard botanical and scientific names, but the confusion about these two grasses, as well as hundreds of other matters, are a striking illustration of the advantage of scientific names and some botanical knowledge on the part of farmers. These names being by universal consent the world over in one language (Latin), have in all countries a precise meaning, while common names are altogether vague and uncertain. We now have a letter before us from the South, enquiring about "tall sapling red clover." If any of our readers can tell us what that is, we shall be glad to hear from them.



COLD VINERY.

The above is a very correct engraving of a cold vinery at Medary, the country seat of Harry Ingersoll, Esq., near Philadelphia. The cultivation of grapes in cold houses, without fire heat, is now attracting much attention. The luxury of having the most delicious varieties at command, in an atmosphere under your own control, without the expense of heat, or the cost of much time and labor, have induced their erection, either in a cheap or expensive style, in various places within the last two or three years. All the advantages of the cold grapery can, of course, be secured, at a much less cost than the above, which is a beautiful plan, similar to one on a larger scale contrived and carried out by Mr. Van Renselaer at Clinton Point on the Hudson. It is forty-three feet six inches long by eighteen feet wide, and fourteen feet high.

Materials, iron work, &c., cost	$185 00
Labor,	200 00
Glass,	90 00
Painting and materials,	28 00
	$503 00

The materials were all of the best, and the work was done by city mechanics at city prices.

The borders outside the house were dug eighteen feet wide by three deep. Similar houses have been offered to be constructed at $10 per running foot.

In some of our back numbers will be found various articles as to the construction and management of cold graperies. Those disposed to cultivate grapes in this way had also better consult Downing, Allen, and other writers on the subject, by which they will save themselves not only time but expense. A deal of money is often lost for want of previous information and experience.

New Seedling Apple.

We are indebted to Richard Downing, of the Great Valley, near Downingtown, Chester county, for a specimen of a new seedling apple of his own raising, which possesses some fine qualities. He calls it "Dick's Seedling." It is now in good eating order, of full medium size, red color, with some stripes, and of a pleasant flavor. The number of fine early apples is yet comparatively small, and we are glad to hear of any increase in the list.

Committees at the State Fair.

The list of committees on another page for the approaching exhibition at Harrisburg, it will be observed,

is constituted of five members each, instead of three as heretofore. This will give them an opportunity of subdividing when the duties are onerous, and greatly abridge their labors of examination and decision.

State Fair Committees at Powelton.

MR. DARLINGTON:—I will never serve on another Committee "that's flat," especially as a substitute. I was decoyed on to a Committee at the State Fair; over persuaded I ought to say by such arguments as, "not much to do," honor to be acquired, silk badge with Judge in big letters to stick in a button hole; free dinner ticket, &c. There were other arguments of a more spiritual nature used, such as demijohns of brandy, boxes of Champaigne, bottles of Madeira wine, &c., glistening in a row under the Judge's table. Being a temperance man they were lost on me, but I have no doubt had their influence in leading many a poor substitute into the same forlorn situation with myself. All seemed to go on well for a time; exhibitors were all smiles and compliments; it was *Judge* here, and *Judge* there; "make room for the Judges," &c., &c.; common humanity had to stand out of the way, and looked very small when they got there. But when the premiums were awarded, *"presto change"*! "the adversary was to pay and no extract of pine hot"; we soon found we had waked up eleven wrong passengers and only one right one, and he happened to be the one that received the premium. We sneaked off leaving all the honor and some of the liquor on the ground, hoping that "out of sight out of mind," but we were sorely mistaken; the storm followed us to our own quiet homes; and I am now convinced, you, Mr. Editor, were the first to see it, for I now recollect you tried to excuse us by the plea of having too much to do, but your kind intentions were of no avail; on our devoted heads it must be poured.

First came T. W. asking "why do committees award premiums to machines and implements which are good for nothing?" Now then, Mr. Editor, is a question to answer; if I knew which *rejected* implement T. W. claimed, I would get the committee together and award him a gold medal out of my own pocket rather than attempt to answer it; but all this we might bear being in company with so large a number of *gentlemen* selected by the Executive Committee of the Agricultural Society of the great state of Pennsylvania. But up starts three more letters of the alphabet, X. P. Q. (by the way Mr. Editor, I begin to feel like the apple pie, that B bit, C cut, &c., the only difference being that in the present attack the alphabet seems to be coming tail foremost) and cuts me, "and a few more of the same sort" from even the consolation of suffering in good company. Now listen, and if you can think of any arguments in favor of suicide, send to my address by next mail.

"The committee on implements at the State Fair were originally composed of *gentlemen* selected on account of their presumed capacity for the duties assigned them; but in many instances they failed to appear, and their places were hastily filled by *men* wholly incompetent." Now, we poor devils of substitutes might bear the skinning if he would only use a sharp knife and stop when the hide was off; but just listen to the way "he piles up the agony."—"It is to be hoped hereafter that the Executive Committee will subdivide the committees that not more than an hour or two need be consumed by each; then *competent gentlemen* will not hesitate to act." Now why did he not send this to us before he published it? We would have bought a patent egg-breaker, hen's-nest, or any other rejected article he might have on hand at any price, rather than be thus exposed. He seems to think we could not be openly bribed like the State Legislature (complimentary to the solons rather,) but insinuates snares were laid for us. Now a man, *gentleman* (I should say) of his capacity should have known that fear is often more potent than money or snares, and his communication presented at our heads would, like the ball from a minnie rifle, have brought us down at any distance.

But let us continue to quote from this wise *man* (I ask his pardon) *gentleman* of the east.—"I passed from machine to machine comparing the merits of each, thus forming my own judgement, or when preconceived opinions existed, correcting, changing or confirming them, either by closer scrutiny, or interchange of ideas with others of similar tastes with my own, whom I met on the ground. Thus *I* became pretty intimately acquainted with nearly all the implements of value, formed *my own* conclusions as to their respective and comparative merits, and awaited the published awards with some little curiosity. I need not say Mr. Editor, the conceit was taken out of me; machines to which I would hardly have given shelter were dignified by Silver Medals; and others of third or fourth rate value were assigned first premiums."

Now, "ther's richness" for you! If the State Society "wishes to reward merit" let them do it. Merry Sir John, says, "men of merit are sought after," but if so they are not easily found, or such an *admirable Creighton* would not have had to hollow "hoop" so loudly. Talk about dividing committees! why here is a *gentleman* that resolved himself into a glorious committee of one, and for mere pastime performed the duties of all your committees united; and performed them just four times as well, for they awarded first premiums to articles that only stood as No. 4 on his list. Much as I suffer I cannot help feeling proud of such a countryman.

I once lived in Delaware County, but the present inhabitants (*gentlemen* I mean,) must be giants, compared with the *men* I knew. If we had two more such gentlemen, one to report on all the live stock, and another to attend to the plowing match, the whole business could be arranged at Harrisburg next fall in the most satisfactory manner.

But there is one thing he complains of that I had like to have forgotten. He says our report "took the conceit out of him", well it could not have been of much consequence, *as it did not stay out long*, and if it hurt him in coming or returning, he deserved it for not sending us his report that we might copy it, and not have exposed our weakness to the scorn of the world. It must have been an interesting sight to see the "conceit coming out of him." I have often tried to imagine it but could not think of any comparison but the sticking a knife into a hoven bullock, (I suppose because I am a grazier,) but I hope the gentleman will not for a moment suppose I imagined the *gas* to have the same bad odour; I was only thinking of the instantaneous collapse and the great relief the poor puffed up animal seemed to feel.

A SUBSTITUTE FOR A GENTLEMAN.

It is proper we should state that T. W. exhibited no implements at the State Exhibition.—Ed.

For the Farm Journal.

Committees at the next Pennsylvania State Fair.

MR. EDITOR:—Great complaints were made (and not without sufficient reason) at, and subsequent to, the last State Fair, of the want of more committees in some of the departments of the Exhibition; many articles were, of necessity either entirely overlooked, or given such hasty notice as not to satisfy the exhibitors. Premiums were sometimes awarded to articles not entitled to the distinction assigned them, and others of deserved merit failed to receive that consideration to which they were entitled. And many of the committees were taxed to their utmost exertions, from morning until night in their efforts to discharge the onerous duties allotted them.

To prevent a recurrence of these evils, and to do justice to exhibitors as well as judges, the Executive Committee at its last meeting, ordered that the committees in the principal departments of the Exhibition, and particularly that of Farm Implements and Machinery, be subdivided. But I observe that the Committees and Divisions, as published in your last number are, (with one unimportant exception) precisely the same as last year. Can the President under whose supervision the arrangement of Committees is made tell why the directions of the Executive Committee were not carried out?

A MEMBER OF THE EXECUTIVE COMMITTEE.

For the Farm Journal.

Deep Tillage.

Much as has been said upon this important subject, its merits are not generally fully appreciated.

Although it is admitted that there is strength in proportion to volume of every thing else, yet when it comes to soil on the product of which we subsist, it is not understood. Many years ago I heard old experienced farmers, say that a *mixture* of soils was beneficial, and in order to get it they would sometimes haul it from the road side, or even dig it out of the inside corners of the fence in the same field that they needed it. These facts and others given by various persons upon the subject induced me to think that I could obtain that mixture by deeper plowing, and thereby save the extra hauling. I tried it and I find that I have turned up a strata of virgin soil that has never been exhausted, which pays well for all the extra labor.

The quality is thereby improved, the volume is increased, the facility with which moisture in a dry time is conveyed to the plant through capilliary attraction in the porosity of the pulverized soil is extended, also the super abundant water in a wet is conveyed off more readily &c.

Hence with others before me, I say plow deep, and in order to do this more readily, keep your plow irons in good repair. I thank no hired man for running my irons close (as it is called) if he does intend to favor me by it. In the fall plowing, *many* are in the habit of plowing shallow the first time but this is a mistake, go deep every time, and the oftener the deeper if you can; also fine, so that every particle of soil that you pass over is moved, loosened and pulverised finely so that the root may obtain its proper nourishment more readily then no *farmer* or farmer's son need go to California for gold.

I am not accustomed to write for the press, friend Darlington, but if you think the publicity of this item will be of any account you are at liberty to give it through the Journal. Yours truly, JESSE E. PHILIPS.

E. Nantmeal, Aug. 8 1855.

Hen Manure—Grafting on Walnut.

Mr. Darlington:—Sir:—In the May No. of the "Journal," I notice a communication written by Rev. Richard Bedford, of Sullivan County, which, in part, is intended as a reply to my communication upon the value of "Hen Manure" as a top dressing, and as he has certainly not comprehended my views fully, I desire merely to right him upon one or two points. In the first place it was not my object that the reader should infer that I considered hen manure *valuable only as a top dressing.* I think I know too well the importance of retaining all the *ammonia,* which it may contain, to attempt the establishment of any such theory, but my intention was simply to recall to mind its importance as such where large quantities could not be had, and then it might be used with the most immediate advantage. In the second place, my suggestion as to the propriety of placing the manure upon the hills, or on the beds, in order that it might be decomposed and thereby lose much of its ammonia, was made with the view that it might be used with the greater safety by those who have never tested its fertilizing properties. I have the satisfaction of knowing, from experience, that if applied to garden vegetables generally after they are up many of them will require replanting. The first season I used it I applied to the plant and immediately covered it with earth and I completely destroyed my early tomato and cabbage plants, since which time I have been a little more careful in its use, and as I cannot get sufficient quantity to spade into my garden I continue to use it as a *top dressing* with the most beneficial results; first allowing it to remain *on* the soil until a *portion of its ammonia has escaped* and then mixing it with the soil in and about the plant. With all vegetables that require *transplanting* I maintain that the position is a sound one—with those that do not require transplanting its admixture with the soil is decidedly preferable for the reasons stated by my friend from Sullivan.

While addressing you, Mr. Editor, will you do me the favor to state, or any one of your numerous correspondents, whether it is practicable to *graft Peach on Walnut.* A lady friend of mine spent a few months in Ohio, some years ago, and she was very particular to inform me on her return that "grafting peach on walnut was very common" there. I have never tried it for the reason that I have had no walnut on my lot. If you can throw any light upon the subject you will much oblige, Yours truly W. P. J. PAINTER.

Muncy, Pa., July, 1855.

In reference to grafting the Peach on the Walnut, there is doubtless some mistake about its ever having been done in Ohio, or any where else. They belong to different natural families, so entirely dissimilar, that no union could probably be effected at all, or if any, one that would last but a very short time.—Ed.

Performance of the Steam Plow in England.

As we were coming away from the trial field, impressed with the sentiment that "the steam cultivators were a failure," and soaked with rain, old Aquarius having turned on his taps, as if to give old Walter Scot the lie for saying the "sun shines bright on Carlisle wall," the stewards, Mr. Amos, and some few other lucky individuals, received intelligence that another steam plow had started in a field half a mile off. Making the best of our way to the light land trial field, there sure enough, stood a portable engine in one corner, with ropes and pulleys, and a plowing machine all in action. The engine was that belonging to Mr. Lee, of Wisall, and the plow and tackle are the invention of Messrs. Fisker, of Stamfordsham manufactured by R. Roger, of Stockton-on-Tees. It had been tried at Perthshire, last winter, being actuated by a water-wheel: this being the first day of its trial with steam power. The whole apparatus is novel, and we may say, uncommonly promising. Instead of a heavy wire rope to drag the plow frame by main force, a light endless hemp rope, only three-eights of an inch thick, communicates power to the plow carriage, which we may call locomotive, as it propels itself in the following manner:—a grooved wheel set in motion by proper spur wheels from the rigger actuated by the hemp rope, winds, as it were, along a strong wire rope laid upon the ground; and the frame being thus carried slowly forward, drags plows or other implements after it. The hemp cord does not touch the ground, but is held up at every 40 yards distance by a "horse," or small friction pulley frame, about 3½ feet high. This cord travels at the rate of 20 miles per hour; but the speed being reduced by the wheel work upon the plow carriage, the latter travels only 2 miles

per hour. When two plows are in work at once having the draught of four horses, the strain upon the rapidly running cord will thus be less than half a horse's draught. We were informed by the exhibitor that a 4-horse engine is sufficiently powerful to work two plows, and that with 4 cwt of coal it will plow 4 acres in a day, the expense for labor being only that of two men and a boy. If this be strictly the fact, we have a complete invention able to plow light land at a cost of say 3s. per acre. That it is not far from the truth we are sure, for we ourselves saw one plow drawn at the rate of at least two miles per hour when the engine had only 7 lbs. or 8 lbs. pressure upon the square inch, and this was an engine of 6-horse power at 40 lbs. pressure. To be sure, the land had been previously plowed, pulverized subjected to the trial of all sorts of drills, and been afterwards well trampled by hundreds of people, and consolidated with rain, so that the possible quantity and quality of the work could not well be ascertained. The plowing we saw was respectably though roughly done, but there was one point really performed—the furrows were well turned. If a steam cultivator can invert the soil thoroughly and cheaply we may put up with a little imperfection in the straightness of cutting and eveness of laying. The method of anchoring the pulleys, and the arrangement of the pulleys and ropes, is very ingenious, and can hardly be explained with brevity. The anchorage consists of a plate or plow, a few feet in length, and 8 inches only in depth; this can be easily drawn forward *in* the ground without the trouble of digging holes, taking up, setting down again &c., and yet it presents a sufficient resistance sideways to the pull of the ropes. A wheel, pinion and crank, on each anchor is used to draw it by means of a rope towards a fixed post, when it is required to be shifted. The arrangement of the ropes about the anchored pulleys is like that of the chains in a travelling crane the anchorage being shifted forwards at intervals without altering the length of the rope. The plows are not rigidly attached to the travelling frame, but are hung by short iron beams, which form levers, having a slight degree of play up and down. There are four plows—two before and two behind the carriage pointing opposite ways, a neat lever movement lifting two out of work and dropping the other pair of plows in; so that the machine can plow both ways without having to turn round at the land's end.—*London Ag. Gazette.*

The New Blackberry.

A year since we gave a somewhat full report (the first one published, we believe,) upon the claims, characteristics and value of the New-Rochelle Blackberry—called also the Lawton. We recommended the plant as one worthy of cultivation, and our endorsement and remarks have been extensively copied by the press of this country, and by some European journals, and a very general interest has been awakened. An evidence of this is found in the circumstance that, during this month, more than a hundred horticulturists and others, from Boston, New-York, Philadelphia, and the cities and towns between these places, as well as from Concord, Albany, Newburg, Utica, Syracuse, and Rochester, have visited the grounds of Messrs. Geo. Seymour & Co., of South Norwalk, Conn., in response to their invitation for "all interested to come and see the plant growing and bearing, and *taste* the quality of the fruit."

These gentlemen have, we believe, the largest area in the country (some five or six acres) devoted to the cultivation of the genuine variety of this plant. A part of this ground they use for raising young plants, and a part was left to fruit this year for the purpose of showing it in bearing while in field culture. All who have examined the fruit have been surprised and delighted with the large size of the berry, its deliciousness, and especially its productiveness. We visited this plot on Thursday of last week, and from what we saw there, as well as at other times during the past year, we are ready to endorse all we stated a year ago.

The plants especially devoted to fruiting were set out two years ago—eight feet apart each way—upon a rather poor, worn-out, hill-side soil, with no other previous preparation than plowing and an ordinary coat of barn-yard manure. The only cultivation since has been keeping down the weeds, and the application of about 400 lbs. per acre of Peruvian guano, which was sown broadcast last spring and worked in with a cultivator where the plants were not spread out so much as to preclude the use of this implement. The ground is now so thickly covered with loaded vines and young shoots that it is difficult to go over it.

Since the beginning of the month visitors have had free access to about one-fourth of an acre, and though hundreds of quarts have been eaten or carried away, the whole vines on this plot seemed to be loaded with berries. Two canes in each hill were allowed to fruit. We counted the berries on some of the average-bearing canes or single stalks, and and found from 500 to 1,000 ripe or growing berries on each.

The size of the fruit can hardly be appreciated by those who have seen only the common varieties of blackberry. Of about the average size, 30 to 40 berries filled a pint basket; while of those a little above the medium, 20 to 25 berries did the same. An inch to an inch and a half may be set down as the average diameter, though larger berries are quite common.

There are two remarkable things about this variety, viz: its few seeds and its richness of flavor, notwithstanding its large size, and steady bearing; for we learn that it has not failed to yield an abundance of fruit every year since its cultivation, now a dozen years or more.

It appears quite hardy, as it sustained very little injury in the open field during the past severe winter. We noticed the tops of a few of last year's canes were slightly nipped by frost.

It grows well even upon poor soil. We should advise a moderately dry loam, but some cultivators recommend even a heavy clay as best. It has been thought that blackberries need shade; but those cultivated by Seymour & Co. are upon an open lot, and we found the best and richest berries upon the top of the vines, where most exposed to the sun. However, the fullest clusters of the largest fruit, though not the sweetest, were partly shaded by the leaves. Mulching, or covering the soil with straw, leaves, salt hay, or some such substance, is doubtless good treatment for this, as for all similar plants. We should advise the selection of at least a moderately good soil, deep plowing or spading, with a coating of barn-yard manure or guano. When first set out they should be placed at about their natural depth, say three inches, in rows 6 to 10 feet apart, and the stems be cut down to within six inches of the ground.

They may be set out in November or April, in this latitude; at the South, in March. Probably November planting is preferable. If planted in autumn, it is better to cover them up till spring with straw or litter.

We have spoken thus freely of this fruit, because we esteem it a valuable acquisition, and we desire to see it distributed so extensively that it may soon become abundant in every market. It now sells readily in New York for 25 to 50 cents per quart, while we do not see why it may not be raised, with a fair profit, at 5 or 6 cents a quart. Once planted, it requires no more labor to cultivate it than the same area of corn, since the chief care required is to keep down the weeds and an excessive growth of young shoots;

though all of these that can be raised for some time to come will probably be in demand at fair prices. The limited supply, and the high prices heretofore asked, has been a bar to its general introduction; but several persons have a large number of growing vines which will be ready for sale the coming autumn, and we learn that the price is being considerably reduced.

A word of caution is necessary in reference to securing genuine plants, carefully packed; for unprincipled and irresponsible peddlers and speculators will in this case, as in that of fruit trees, attempt to palm off any thing in the shape of a blackberry vine, as the genuine New-Rochelle. If carefully packed, they may be carried safely to a considerable distance, provided always, that in taking up or setting out, the roots are never left exposed to wind and sun.--*Agriculturist.*

The Time When Pears Should be Gathered.

BY M. DE JONGHE, OF BRUSSELS.

Formerly when the varieties of Pears in cultivation were comparatively few, there was little difficulty in knowing the time when each sort ought to be gathered; but now, when the number of good varieties is so much increased, the proper time for gathering the respective sorts cannot be known without a certain experience acquired during a period of from three to five years in order that a mean may be obtained. For the maturity of the fruit on the tree depends:—

1. On the individual constitution of the tree, and its liability to change.
2. On the soil in which the tree is planted.
3. On the influence of the stock.
4. On the temperature of the season, whether more or less favorable for accelerating the maturity of the fruit.

In order to know exactly the mean period of maturity on the tree of any particular variety of fruit, it is necessary to observe several trees of such variety, planted in different soils and situations. With regard to the varieties of Pears which ripen at the end of summer, or early in autumn, it is not difficult to fix the date when they should be gathered; for in the same situation, this, in different years, does not vary more than 10 days.

The influence of soil, of stocks and of temperature more or less warm and dry, is not so great on early fruits as on the late autumn, winter, and spring varieties. With regard to the summer and early autumn kinds, they cannot always be left to ripen completely on the tree, grown as a pyramid or standard, and it is needless to add that these sorts of fruit do not, in our climate, merit a wall, where in fact they are never so good as in open ground. When a considerable number of fruits is observed to have reached the point of maturity, and when, with a slight pressure of the thumb, the stalk is readily detached, without twisting at its junction with the spur, a portion of the fruit should then be gathered, and allowed to acquire their full maturity in the fruit-room. This first gathering will ease the tree, and the whole of the nutritive sap will be directed towards the remaining fruits, which, in consequence become much finer; these are gathered in the same manner, and successionally. The operation of successional gathering, called, in French gardening terms, *l'entrecueillement*, may be very advantageously followed up, because all the fruits on a tree never ripen simultaneously; and that they may acquire full perfection, it is important that they should be left on the tree to attain the necessary degree of maturity known to the practised eye by certain signs which it would be difficult to point out without entering into tedious details.

With regard to the late autumn, winter and spring Pears, the same proceeding is adopted; it is only by successional gathering, *l'entrecueillement*, that we can hit upon the proper time and know the happy medium between gathering too early or too late. The gathering of these fruits in season as above mentioned, commences about the middle of September, and continues till the end of October, or till just before the fall of the leaves.

When some fruits, neither bruised nor pierced by insects of a late variety of Pear begin to drop, although not affected by strong winds nor by the continued drought which we sometimes experience in our climate towards the end of September; and when the leaves begin to turn yellow and fall from the tree, an attentive and experienced person will perceive that the period of gathering is close at hand.

As above stated, the period of the maturity of the fruit on the tree, and likewise in the fruit-room, depends in a great measure on the soil in which the tree is planted; and the most delicious qualities of certain varieties of Pears are owing to the peculiar nature of the soil. The lighter, warmer and drier the soil, the sooner the flow of sap ends, and the earlier the fruit indicates the necessity of partial gathering. But in case of a stiff cold soil it is the reverse. The first variety of soil will be favorable to one kind of Pear, whilst the second would be unfavorable, and *vice versa*. But these details belong to a monograph on the cultivation of the principal kinds of Pears; which it is hoped will be completed some of these days, and it will prove very useful to young and inexperienced cultivators. In proof of this, I may be permitted to give an example and it is taken from amongst many others. The variety of Pear called the Nouveau Poiteau of Van Mons, is unquestionably one of great vigor, very hardy, and productive. Worked on the pear stock, and trained *en pyramid*, it bears fruit as large and as handsome as the Duchess d'Angouleme, Beurre Clairgeau, and Maria Louise. Cultivated on the Pear stock, or on the Quince, in a free light soil, with a more substantial and somewhat gravelly subsoil, this variety bears fruit which is melting, sugary, vinous and slightly aromatic; whereas, if the tree is cultivated in a stiff cold soil, the fruit possesses none of these qualities. It is to be observed that the mean period of the maturity of the fruit takes place between the 10th and 25th of November, but without any change in its color, (an opaque green), to announce that such is the case.

It cannot be denied, and all practical men agree, that the stock has great influence, not only as regards the period of gathering the fruit, but also with respect to that of its ripening in the fruit-room. I knew a cultivator who raised stocks for budding with summer and autumn fruits, others for winter and spring varieties. With regard to the summer and autumn kinds the nature of the stock is of little importance; but when long keeping sorts are worked on wild Pear stocks, which stocks if allowed to fruit would produce summer Pears, it is certain that the period of ripening of late Pears worked on these stocks would be affected. I have seen some seedlings, planted in proper soil, produce fruit of which the medium time of ripening on their own roots had been fixed between December and February; but when grafted on summer or early ripening wild Pears, the ripening of the above varieties, grown on similar soil, was accelerated more than a month. Such irregularities do not result from propagations on the Quince stocks, because these are identically reproduced from layers. The importance of avoiding the unsuitable union of winter and summer fruits will be readily admitted; that is, the grafting of late ripening varieties of Pear trees on early ripening wild Pear stocks.

I am aware it will be objected that the purchaser would not take precautions on this point into consideration; that he only sees to the young trees having been once or twice properly cut or pruned and that a certain number of such

and such varieties required for his plantation is obtained. I understand these objections, because they do in reality exist. However, there are some intelligent amateurs who wish to obtain good articles on which they can depend, and are willing to pay a good price for them as a just remuneration to the producer.

Warm and early seasons accelerate the maturity of the fruit on the tree, but not in the fruit-room. After a good summer and warm autumn, Pears keep better, are always longer in becoming fit for use than when the season is otherwise, especially as regards the late sorts. After the warm summers of 1834, 1838, 1841, 1844, 1848, and 1850, the Passe Colmar and Beurre d'Hardenpont (Glout Morceau,) although gathered in the end of September, kept till the end of December and January; the Beurre Rance, from January till April and June.

In conclusion, from what has been stated, it results that the same kind of fruit cannot be gathered uniformly at the same date, owing to various circumstances which influence the ripening; that by successional gathering, or at intervals, the proper time for different localities is best ascertained; and that, in general, all the varieties ought to be gathered before their perfect maturity, which should be attained in the fruit room.—*London G. Chronicle.*

How to Destroy Aphides on Bedding Plants.

During a visit to a friend in Devonshire, about a month ago, I was much struck with the appearance of his parterres, then gay with various bedded plants in the best possible condition; all I had theretofore seen and since inspected were in a very different state, the complaint of green fly being general this season, even in grounds where pains and expense are not spared. On inquiring how this was effected, my friend informed me that he was visited like his neighbors with aphides; but that, so far as regarded low-growing plants, the remedy was speedy, certain, and simple; his plan being as follows. He has four slight wooden boxes without bottoms, about twenty inches deep, made to fit just within the edging of the divisions of his parterre, all the divisions being precisely of the same size and pattern, so as to admit of a box fitting either one. He places a box upon each, presses down the edge, and through a hole in the end introduces the spout of his fumigator, and having filled one box with smoke, plugs up the hole and proceeds to another. He uses dried stuff, with a mixture of tobacco, and fills four boxes with each charge of his fumigator. The smoke being injected cool, he is able to remove the box after four or five hours, taking care to admit the air gradually; and he contrives to smoke three times, or twelve divisions in the 24 hours, without causing the bloom to droop, as it would do, and does, in fact, when he uses tobacco paper, or ignites within. I saw one operation performed on the four boxes in about as many minutes, and nothing could be more effective. Now, it has occurred to me since witnessing this that we have the solution of a problem which has puzzled me and others, and that I shall be doing my fellow florists a service by making it known. Hitherto it has been easy enough to fumigate houses and frames, either with the fumigator or by burning tobacco paper and other combustibles in them; and even standard Roses I have seen fumigated by covering them with an oil-skin bag distended on a parasol; and, moreover, shrubs and plants of tall growth are often dusted with snuff, or covered with tobacco-water or other solution, all, however, tedious and uncertain operations; but to clean plants, such as Verbenas, &c., pegged to the ground, has hitherto been considered an impossibility. And why should not this plan be applied to borders of any length? It would only be necessary to mark them out in equal divisions, keeping about three inches of space unplanted between each division, and so covering them with boxes made to fit these divisions. Again, market gardeners might avail themselves of the process to fumigate Strawberries; and by providing a lot of old casks, with one end knocked out, and past use for other purposes, to be procured very cheap at cooperages and pitched over; or they could cover their shrub fruit, such as Gooseberries, Currants, and Raspberries, and bring it to market in such a clean state as would give it a preference, while they insured the crop, now often injured and sometimes totally destroyed by aphis and other vermin. I would suggest that, when the divisions of flower parterres are cut out in fanciful shapes the covers might be made of tin, fitted to the parterre, and riveted upon an iron frame round the bottom; these being painted occasionally would last for many years.—*London Gardener's Chronicle.*

Deepening the Soil.

To deepening the soil as the efficient means of an increased fertility there are many testimonies. Perhaps the most definite and valuable is that of the Rev. S. Smith, of Lois Weedon, in Northamptonshire. His evidence is valuable, both because it refers to two very different kinds of soil, and because it extends over a number of years. We refer to it rather for the purpose of illustrating the principles of tillage than in order to commend any particular mode of farm practice. Having walked over his fields both in winter, when the process was in operation, and in summer when its results were ripened, we can speak as to the means employed, the soil on which they are employed, and the produce which rewards them. Early in July last year we saw Beans and Swedes and Wheat on a very stiff loam, which had been gradually deepened by means of the fork, latterly indeed trenched. And on a gravelly soil, in an adjoining field which had been similarly deepened, there was an abundant crop of Wheat. The Swedes were luxuriant and healthy, such as are seen ordinarily under good culture in September; the Beans were wonderfully podded; and the Wheat was the most extraordinary crop of the three. It has been Wheat after Wheat on the same soil for a succession of years; triple rows, a foot from one another, being cultivated with 3 feet intervals; these intervals, forked and cultivated during the growth of the rows on either side, being the site of the next year's crop. This alternate crop and fallow, without the use of manure, yields an average of 34 bushels per acre per annum over the whole land so treated; deep and thorough tillage thus proving to be in effect the equivalent of manure. The fact, for so after 10 year's observation it may be called, is, that by dint of deep and thorough tillage successive corn crops can be grown by bringing the mere life of the seed into connection with the stores of food for it which a tolerably stiff soil and the atmosphere together yield.

But the advantage of a deeper soil on the one hand, and of more thorough tillage on the other, is now everywhere admitted; the more general prevalence of Turnip husbandry has contributed greatly to the latter good result; and Mr. Smith's, of Deanston, subsoil plough, and every instance of cultivation such as that of Lois Weedon on a horticultural scale, and by horticultural means, have contributed to the former. And so we see that cultivators, horse-hoes, grubbers, are taking the place of those imperfect tillage implements—heavy drags and harrows; and ploughs for deeper work are made and used in large numbers. We do not add here remarks upon the obvious cause of infertility which shallowness of soil is when lying on the rock. Where plants are "scorched because they have no deepness of earth" the remedy is obvious enough, however inapplicable it may be. Pastures upon the chalk, the mountain limestone, and the

millstone grit are often thus burned up in summer, and were it possible so as to deepen such land, it would be seen that a couple of farms would be more productive if they could be laid one a-top of the other than they now are in their extent and shallowness.—*Gardeners's Chronicle.*

Farm-Yard Poultry.

From time to time the columns of the "Poultry Chronicle" have urged the necessity of increased care and attention to farm-yard stock. It must be apparent to any person conversant with the amount of poultry and eggs annually required in the United Kingdom, and the large quantity of breeding poultry kept on farms, that the produce is not equal to the demand, nor does it reach the amount it ought to do; this arises chiefly from farmers keeping bad small stock, breeding in, and retaining old and useless birds. It is difficult indeed impossible, to obtain any correct amount of the *enormous* importation of poultry and eggs from abroad. A recent article in the "Quarterly Review" gives some useful information on this point, but the writer confines his observations to London alone. There can be no doubt that the trade is a most valuable one, and it is much to be regretted that our own farmers, (who by keeping poultry admit the necessity of such stock on a farm) should throw away so great a source of profit. The following figures will show that the trade is very considerable, they refer only to the quantities brought into two of the principal London markets, and are as follows:

Eggs	75,000,000
Fowls	2,000,000
Pigeons	400,000
Turkeys	100,000
Geese	100,000
Ducks	300,000

In addition to these quantities, the vast amount sent to poulterers and private houses must be considered. It is difficult to say what proportion of this comes from abroad, but the fact that sixty million of eggs are imported annually from France, and that the Brighton Railway alone carries yearly about 2,600 tuns of eggs brought from Belgium and France, are fair indications as to the rest.

If this very large trade is so valuable to foreigners, it must be apparent to any poultry keeper that the British producers should take steps to secure it for themselves.

It is notorious that this year there has been a great want of poultry, not only in London, but in poulterer's shops throughout the kingdom, and it is equally well known that, except in London or some of the largest towns, a good plump well fed fowl is never found. This is the result of the present farm-yard system, if such carelessness can be called a system. The little fowls produce little chickens, and *after having given as much trouble and eaten as much food as a good bird would have,* they are sent to the local market, and bring such small prices as to be quite unremunerative. Had these birds been the produce of really good stock, and received a little extra care to make them plump, they would without increase of trouble or expense, have realized such a sum as would have perceptibly increased the year's receipts. These observations are not made to those who are prejudiced against, and do not keep fowls, but to those who at present keep bad ones with a view to encouraging them to get good ones. Nothing is more easy, thanks to the numerous exhibitions; there is scarcely a neighborhood that has not one or more breeders of good stock, generally willing to part with some of their surplus birds at moderate prices.

It can scarcely be doubted that the best stock for table purposes is the Dorking; the varieties have been mentioned before in these pages. Those who wish to breed a very large bird should procure the light grey or speckled kinds; those who wish to have a moderate plump bird may get the *Silver Grey* variety, sometimes known as "Lord Hill's breed." These birds are to their larger brethern what the Southdown sheep is to the Leicester, and other larger varieties, and they have one advantage to the fancier, viz., that they breed true to color, which the larger birds do not, and there are few things more agreeable in poultry keeping than a yard filled with evenly-marked birds, all alike; but whatever breeding stock may be decided upon, no poultry keeper who wants eggs should be without Cochin or Brahma pullets: as winter layers they are invaluable, and produce a constant supply when fresh eggs command a high price. If Ducks are kept, the Rouen or Aylesbury will answer best; and if Turkeys are required, the Norfolk or Cambridge birds will make as fine meat as need be wished.—*Am. Agriculturist.*

Profits of Fruit

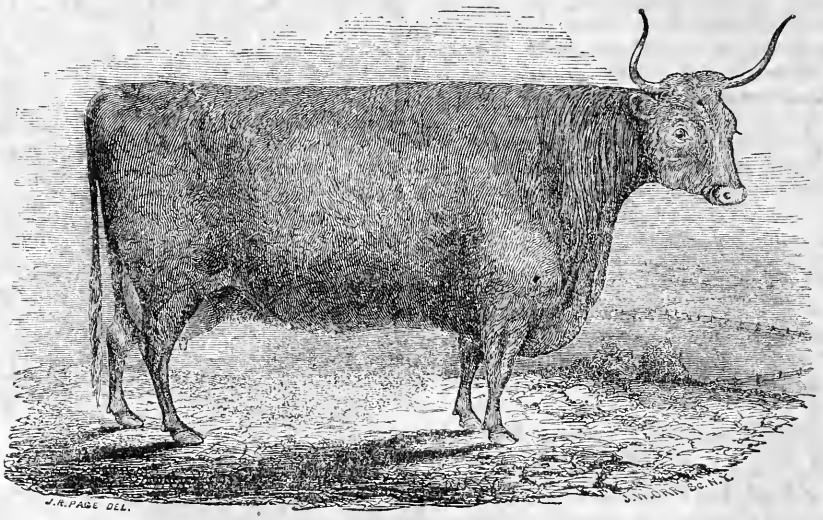
Examples almost without number may be given, where single trees have yielded from five to ten dollars a year in fruit, and many instances in which twenty or thirty dollars have been obtained. If one tree of the Rhode Island Greening will afford forty bushels of fruit, at a quarter of a dollar per bushel, which has often occurred, forty such trees on an acre would yield a crop worth four hundred dollars. But taking one quarter of this amount as a low average for all seasons, and with imperfect cultivation, one hundred dollars will still be equal to the interest on fifteen hundred per acre. Now, this estimate is based upon the price of good winter apples for the past thirty years, in one of our most productive districts; let a similar estimate be made with fruits rarer and of a more delicate character. Apricots, and the finer varieties of the plum, are often sold for three to six dollars per bushel; the best early peaches from one to three dollars; and pears from hardy and productive trees, two to five bushels per tree, with good management, is a frequent crop; and on large pear trees five times the quantity. An acquaintance received eight dollars for a crop grown on two fine young cherry trees, and twenty-four dollars from four young peach trees of only six years' growth from the bud. In Western New-York, single trees of the Doyenne or Virgalieu pear have often afforded a return of twenty dollars or more, after being sent hundreds of miles to market. An acre of such trees, well managed, would far exceed in profit a five hundred acre farm.

But the anxious inquiry is suggested, "Will not our markets be surfeited with fruit? This will depend on the judgement and discretion of cultivators. With the exception of the peaches of Philadelphia and the strawberries of Cincinnati, a great deficiency is felt in all our large cities. Of these two fruits, large plantations are brought rapidly into bearing. The fruit, when ripe, quickly perishes, and cannot be kept a week; yet thousands of acres in peach trees, bending under their heavy crops, are needed for the consumption of the one city, and broad, fifty acre fields, redden with enormous products, send many hundred bushels of strawberries daily into the other. If, instead of keeping but three days, sorts were now added three months, many times the amount would be needed. But the market would not be confined to large cities. Railroads and steamboats would open new channels of distribution throughout the country for increased supplies. Nor would the business stop here. Large portions of the Eastern Continent would gladly become purchasers as soon as sufficient quantities should create facilities for a reasonable supply. Our best apples are eagerly bought in London and Liverpool, where nine dollars per barrel is not an unusual price for the best Newton Pippins. And by being packed in ice, Doyenne pears gathered early in autumn have been safely sent to Jamaica, and strawberries for Barbadoes. The Baldwin apple has been furnished in good

condition in the East Indies two months after it is entirely gone in Boston,—*Saturday Evening Mail.*

Fruit Growing in Philadelphia.---Large Plums.

One of our neighbors was recently showing us a specimen of his *fruit orchard in Philadelphia*, only a few feet square, attached to his dwelling, which illustrates how much can be done in a small space. They were Coe's Golden Drop Plums of extraordinary size and beauty, one of them weighing two and a half ounces—a luxury even to look on, to say nothing of the eating qualities, which of this variety are well known to be unsurpassed. We have often observed the superior quality of fruit grown in our city gardens, particularly pears and plums. The comparative freedom of the latter in the city from the curculio, is no doubt partly owing to the pavements admitting no harbor for their eggs, which are destroyed with the punctured plums when dropped. We know of a case where air-slaked lime was applied once a week, early in the morning, by dusting it over three plum trees. Adjoining were three other plum trees, equally loaded with fruit, to which the lime was not applied. In the latter, the plums were stung and all dropped off; in the other case they ripened and perfected all their fruit. What has become of Matthews' remedy for the curculio? Are not the committee prepared to report?



NORTH DEVON COW "BIRTHDAY" (38)*, ten years old.

Winner of the first prize at the New York State Show in 1853 and 1854. First prize at the Devon Agricultural Show at Exeter in 1848, and first prize at the Barnstaple and North Devon Cattle Show in 1848, as one of a dairy of cows. She was sired by Proctor (109), dam Taunton (410), and is the property of L. G. Morris, by whom she was selected and imported.

The above is a perfect model of a true North Devon cow, having nearly every good point for which the breed is so celebrated. Her form is a capital subject for study to young farmers, who are about introducing Devon stock on their farms. In our third volume, page 34, will be found a scale of points for Devons adopted by the New York State Agricultural Society. By comparing the engraving before us with this scale, Birthday will be found to have nearly all the points constituting excellence. Whatever preferences persons may have for particular breeds, all admit that for oxen the Devons are altogether unrivalled. Their shoulder approaches in form that of the horse, having that obliquity which enables them to lift freely their fore extremities, while their quarters behind are relatively long—a character connected in the ox as in the horse with the power of active motion. Their bodies too are light, and their limbs long, muscular to the hock and knee, and below these points sinewy. Low says, "in England they trot well in harness, and will keep pace with a horse in the ordinary labors of the farm." We hope to see many of the fine Devons in Pennsylvania at the approaching exhibition at Harrisburg.

We know of several Devon cows, very superior milkers, and perhaps the best stock in the country of mixed blood, for dairy purposes, is part Devon.

*Davies' Devon Herd Book.

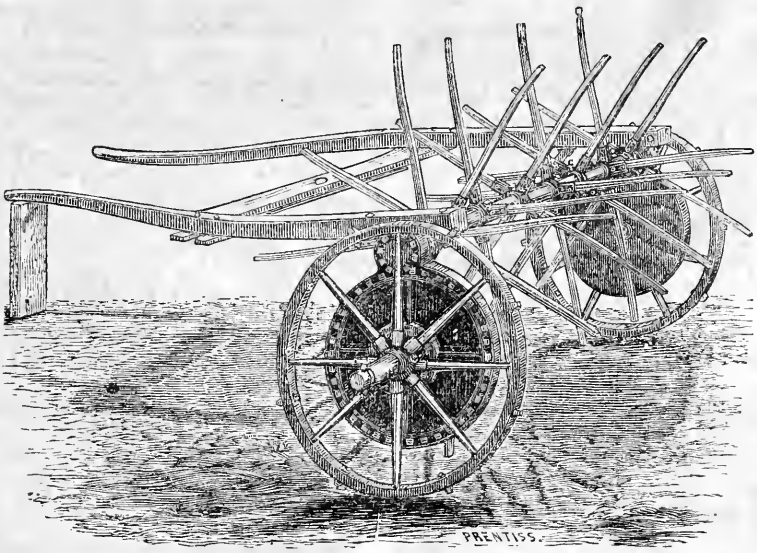
Transplanting Evergreens.

From the middle of August to the middle of September is preferred by some to any other season for transplanting evergreens. Others prefer late spring planting, say from the middle and last of April to the middle and last of May. There is no doubt, as a general thing, there are more failures in moving evergreens than deciduous trees, but we say unhesitatingly there is no reason for this. We should rather consider the risk to be in their favor, provided the *proper precautions* are observed. Most varieties of evergreens abound more in fibrous roots, which cling close to the soil, and are taken

up with more of the surrounding earth than can be done with deciduous trees. These fibres, with little spongelets or mouths at their extremities for absorbing food, are of far more consequence to be preserved uninjured than the large roots, and upon transplanting being accomplished without their mutilation often depends the life of a tree or shrub, whether evergreen or deciduous. If there is one cause of failure more than another in the transplanting of evergreens, we think it is in allowing the roots to become dry. Unlike other trees, their extremities, when once dried by exposure to the sun and closed up, do not again readily open to absorb food. The fibers do not seem in this particular to have the same elasticity as the roots of deciduous trees, and, therefore, cloudy or damp days should always be selected for their removal, and the precaution taken of covering the roots as soon as they are lifted out of the ground. With this and the usual care taken, as with other trees, there is no difficulty in transplanting evergreens. As to the proper time, we believe the present is as good as any other, if not better, but any time will answer excepting when they *are growing*, or before the new wood is mature—a period generally occupying the months of June, July and August.

At the present season of the year the ground is warm, and as the sap elaborated from the leaves is descending, the roots commence growing immediately, and often establish themselves before winter. The atmosphere is also more moist, and the cloudy days and heavy dews prevent the same excess of evaporation from the leaves, as during the dry and hot suns of spring and summer.

When the holes are half or two-thirds filled, it is advisable to pour in a plentiful supply of water, which settles the earth about the fibres, and promotes their speedy starting. This is far preferable to surface watering. Heavy stones should also be placed around the trunk, or a stake secured to prevent their being blown about by high winds. There are no three evergreens of large growth to be compared with the Norway Spruce, Silver Fir and Hemlock Spruce. No lawn is complete without these, while the filling up may be done according to fancy with Deodar and Lebanon Cedars, Cryptomeria, Double White Spruce, and numerous other varieties, to be found at the nurseries, and which should be visited at this season by all who intend to plant the coming fall or spring.



HAY TEDDING MACHINE.

The above is a cut of a Tedding or Hay-making Machine, built somewhat on an English model, but greatly simplified by American skill and ingenuity. The English machine was patented there in 1816, and has been in extensive use since. The combination of the gearing is such that the revolving rake makes four and a half revolutions for one of the carriage wheel, the hay undergoing a process of teazling or tedding of the most perfect description. It is separated and tossed about till no two stems of the plant are left in contact, and by this exposure the drying process is effected in a period greatly shorter, and more effectually, than could be done by any number of hands.

It is intended for one horse, to be ridden by a boy. About two acres can be spread with it in an hour, the hay being thrown some six or eight feet high, and falling evenly, and so light, that the sun and air have access to every part.

What labor-saving implement for the use of farmers is coming out next it is difficult to say, but the old idea, about farming being a laborious occupation, will soon have to be abandoned. They can now ride in an arm chair, with an umbrella over their heads, through their fields, cutting their hay and grain, raking it together, spreading the hay, drilling their grain, and various other operations, while comfortably seated on top of the machines. This is a great change in twenty years. Some patent elastic cushion, and a spring seat chair, with high back, may perhaps be needed after a while instead of the present rather uncomfortable seat, but the times are hardly up to that requirement yet. When they are

some new patent for the occasion will doubtless be brought out.

Breaking Steers.

In breaking a pair of steers, *first* confine one of them in a yard 14 to 18 feet square, high and strong enough to hold him; then enter the pen with a *switch* three or four feet long, and with your pockets filled, not "with rocks," but with ears of corn, apples, carrots, &c. Tame the steer by feeding him, and convince him that you mean him no harm. Having done this, I introduce my business to him, by getting him into a corner with as much gentleness as possible. Here stroke him and pet him in various ways feeding him with a nubbin or two of corn.

Of course he must learn to *"haw"*—so I strike him gently on the *off ear* with my switch, and with my back to him twist his tail, (a little twisting is better than more;) having succeeded, I conduct him again to his corner and order him to *"whoa"*--which from the *force of circumstances* he is compelled to do. Thus I teach him to *"stand"* as well as *"haw,"* and in a short time he will obey the command in any part of the pen.

After sufficient practice in the pen, I let him out into a large yard and then drive him with equal success. Here he becomes well accustomed to the "Whoa, Haw, Gee," processes. But if he does not prove sufficiently tractable I return him again to the small yard for further discipline. The other steer I serve in the same way.

Preparatory to yoking I drive them both into the pen and exercise them together, making one stand while the other comes up as if coming under the yoke, the whip being held out to represent the yoke. Then taking the bows out of the yoke, I lay it on their necks, taking care not to frighten them in the operation, then put in the bows, and I have a yoke of oxen! But previous to yoking, drive them side by side in the large yard. While driving in the large yard either single or double, use a whip 8 or 10 feet long, and when driving both, put on a lash two feet long.

CAUTIONS.—Keep cool! use judgement for yourself and for your cattle. If they *kick* you, look out next time, but don't return the *compliment*, for you are not to consider yourself on equal terms with them. A little patting and rubbing is better. If you have not Christianity enough to return good for evil, don't undertake to break steers. I had rather break a pair of wild steers for $5, than a pair that had been injudiciously handled for $10.

Be very careful not to overload them, and never drive them till they get out of breath. Many cattle are broken in spirit and constitution while young. Indeed, very few know what a good, well-broken, well-fed, and well-tended pair of oxen can do. Never whip, and never talk loudly. The superiority of this mode in economy of time, in ease of execution, and in final results, will be apparent enough to any one who tries it. CHARLES H. WALKER.

Pearl Creek, April, 1855.—*Exchange.*

Physic to Colts at Weaning.

Many persons are of opinion that it is unnecessary to administer physic to foals and young horses; but a few observations will dispel that notion. After a foal has been weaned and deprived of its mother's milk, the liver very frequently assumes an inactive, sluggish disposition. The coat indicates this by its harsh unhealthy appearance, and the animal gives evidence of being what is termed hidebound. Very often the legs will fill from an irregularity of the circulation, consequent upon the state of the liver. In such cases one or two mild doses of aloes becomes indispensable. Diuretics are of no use under these circumstances, their action being on the kidneys and urinary passages, which are not the seat of disorder. For foals recently weaned, one drachm of aloes with an equal portion of ginger and of soap is the proper quantity; but if that does not relax the bowels sufficiently, the proportion of aloes may be increased on the second occasion. A slight dose only is required, because the aloes being supposed to act primarily on the liver, it is merely necessary to stimulate that organ to its healthy action. The only restriction necessary in the diet is substituting bran mashes for hay during the twenty-four hours preceding the time of administering the medicine, and carefully providing the animal from the effects of rain; otherwise, if the weather be favorable, no danger need be apprehended from the usual enlargement in the paddock or field during the operation of the physic, while the exercise will assist the desired result. Foals which have been fondly treated when with their dams, and subsequently, will not occasion much trouble in administering the ball. When they are weaned a light head collar or halter should be put upon their heads, and, being accustomed to that, the ball may readily be given by placing it on the end of a piece of whalebone or cane.—*Mark Lane Express.*

How to Cut Hedges.

Almost all the Thorn hedges one sees clipped square, *i. e.*, the top is made flat and the sides perpendicular, the object apparently being to make them as like a wall as possible. An observation I heard made lately seems to have a great deal of truth in it, viz., that this system has a great tendency to make the hedge grow thin below, and that it is a much better way to keep it widest at the base and let it gradually taper to a point at the top. I have certainly seen hedges managed in this way present a beautifully close surface, which I attribute to the plan of allowing a much greater number of shoots to reach the outside. Hedges kept square are very apt, when old, to get "blanky," and grow bare near the ground, even though the top may be quite thick and flourishing. In this case there is no remedy but cutting down, always a disagreeable necessity, for then all shelter is gone at once, whereas this would very seldom be necessary if the hedge was kept in a pyramidal shape, for then there would always be plenty of shoots close to the ground equally young and growing as those at the top. *A Northern.* [This is excellent advice, but we are concerned to hear that our north-country friends stand in need of it.—*Eng. Paper.*

Hoeing, Versus Watering.

At this season of the year, when vegetables begin to look parched and the ground becomes dry, gardeners think they must commence the use of the watering pot.

This practice, to a certain extent, and under some circumstances, may, perhaps, be proper, but as a general rule, to which there are commonly some exceptions, I apprehend it is incorrect. The same time spent in hoeing, frequently stirring the earth about vegetables, is far preferable. When watering has once commenced it must be continued, must be followed up, else you have done mischief instead of good; as, after watering a few times, and then omitting it, the ground will bake harder than as though nothing had been done to it. Not so with hoeing. The more you stir the ground about vegetables, the better they are off; and whenever you stop hoeing no damage is done, as in watering. Ground is always improved by stirring; and stop when you will, there is no subtraction from this benefit, no danger accrues. Vegetables will improve more rapidly, be more healthy, and better at maturity, by frequent hoeing than by frequent watering. And this result is very easily shown by experiment. Just notice, after a dewy night, the difference

between ground lately and often stirred, and that which has lain unmoved for a long time. Or take two cabbage plants, under similar circumstances, water one and stir the other just as often, stirring the earth about it carefully, and thoroughly, and watch their improvement, see which thrives best.

There is also a secret about this stirring the earth, which chemists and horticulturists would do well to study with the utmost scrutiny and care.

Soil, cultivated in the spring and then neglected, soon settles together, the surface becomes hard, the particles cohere, attract little or no moisture, and from such a surface even the rain slides off, apparently doing little good. But let this surface be thoroughly pulverized, though it be done merely with an iron rake, and only a few inches in depth, and new life is put into it, the surface becomes friable and soft, the moisture of the particles again becomes active, attracting and being attracted, each seeming to be crying to his neighbor, "hand over, hand over—more drink, more drink." And why this elaboration should grow less and less, till, in a comparatively short time, it should seem almost to cease, is a question of very difficult solution; though the different composition of soils, has doubtless something to do with the matter.

But let the stirring be carefully repeated, all is life again; particles attract moisture from the atmosphere, hand it to each other, down it goes to the roots of vegetables, the little suction fibres drink it in, and though we cannot see these busy operations, yet we perceive their healthy effects, in the pushing up of vegetables above the surface.

Now, if these things are so, and any one can satisfy himself by trying the experiments, then I think, Mr. Water Pot, you might as well retire and make your bow to Mr. *Gardiner Journal.* HOE.

Agricultural Show in England.

The annual exhibition of the Royal Agricultural Society of England took place at Carlisle about the 20th of July. It is spoken of as generally satisfactory, although the display in many departments fell very short, in extent at least, of previous years. The entries of Short-Horns, compared with the last show at Lincoln, were as ninety-eight to one hundred and eleven. Herefords were more numerous, being as thirty-two against fourteen of last year. Devons as twenty-three against thirty-eight. Of horses, being in the horse-breeding region, there was a large and fine display. Of sheep, the show of Leicesters was unusually large; the Southdown class much less; the Mountain and Cheviot sheep very numerous. U. Tanday was most successful for premiums among the Leicesters; U. Rigden, of Brighton, in the absence of Jonas Webb, among the Southdowns, and U. Lane in the long wool classes. Of pigs, there were fifty-three pens less than last year, and many of them were complained of as being over-fed. Some were thrown out of competition on account of their teeth indicating a greater age than stated in the certificates. The number of pens of poultry was one hundred and ten less than last year. The Dorking class was most admired, while the entire class of Spanish fowls received high commendation; also the Aylsbury ducks.

In implements the display appears to have been short on account of the distance of Carlisle from the manufacturing districts. There was, however, a great variety of plows, reaping machines, portable threshing machines, chaff cutters by hand and power, bone mills, linseed and corn crushers, brick machines, draining engines, &c., Hussey's and McCormick's reapers, with English additions, or improvements. They have appended to Hussey's a tipping platform for facilitating the back delivery; also a balance weight to the crank axle to give greater freedom in its rapid revolution. To McCormick's machine they have added a patent platform, on which are mounted three worms for delivering the grain off sideways. "The worms on which the ear ends of the straw falls, having a larger diameter than the worms next the cutter, send off the straw with greater velocity and impetus, thus insuring a very regular lay of the swathe for binding."

Salmon's American grain fan obtained a silver medal, and attracted much attention. The editor of the Agricultural Gazette says it separated oats from peas, beans and corn, clover from timothy, red-top from clover, and will take grass seeds, clover seed and wheat, and separate all three seeds at one operation. He adds, "its extraordinary operation reminded him of another American machine, advertised to give out ready cooked sausages from one end and brushes from the other, having swallowed a hog in the centre." A Yankee operator attended the fan, and told the people it would separate *new* from *old wheat.*

The greatest attraction at the show appeared to be the steam plow, and having given in our last number an article from an English paper, stating the advantages expected from the introduction of the steam plow, we now give in another column an account of the performances of the one which worked most satisfactorily. Several were exhibited.

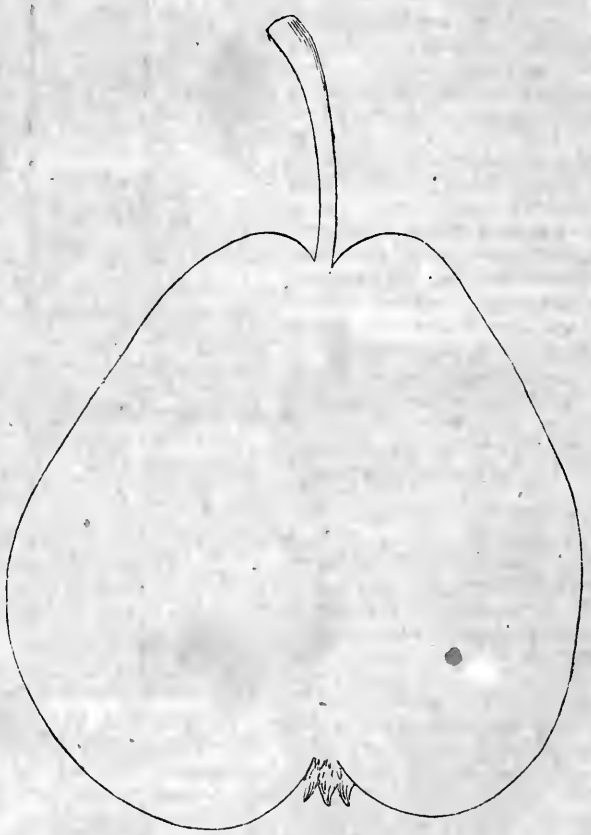
Planting Trees.

As the Planting season is again approaching and will no doubt catch many still unprepared, who have been lamenting all the past summer over their scarcity of fruit or shade or both, we would encourage them at once to make arrangements, by selecting at leisure the varieties of trees they want, ploughing and preparing their ground, choosing a proper site, preparing stakes &c. There is so much to be said about these different matters that we have no space in a work like the Farm Journal, where a variety of subjects claim attention, to enter upon it at much length. Every one having planting to be done should purchase as a matter of positive necessity and for permanent use some one or more of the works extant, on Fruit and Ornamental Trees. Downing, Barry, or Thomas's fruit books, should be in the hands of every farmer; and for information respecting ornamental trees and shrubbery, there is no treatise so cheap and so desirable as Meehan's Hand book, price seventy-five cents. Whether fall or spring planting be preferable, is a matter of opinion; for apple, pear, cherry and plum trees, and for deciduous ornamental trees, we greatly prefer the fall, for several reasons. First, it is a more leisure season, and more time can be spared to plant properly; second, the trees become settled and established, the roots make some development of growth even in the winter, and are ready for the earliest advance of spring. They consequently grow more the first year than if transplanted in the spring; third, they do

not suffer so much from drought, and have more strength to withstand the drawbacks of sudden changes of temperature, often fatal to young trees; fourth, a better assortment can generally be obtained at the nurseries, than in the spring. In fall planting it is highly important that the trees should be well staked, to prevent being blown about by high winds; a few stones placed around the tree will also assist in keeping it steady. A map of every newly planted orchard should be made, with the position, and name of each tree. Every variety should also be denoted by a zinc label as described in one of our back Nos., and attached to the tree by a copper wire. In respect to exposure and location, it should be remembered that on high situations, and with northern slopes there is less danger of injury from late spring frosts. Trees should not be planted in sod, but mellow ground, previously deeply ploughed and subsoiled, and as an orchard can not be thoroughly ploughed after trees are planted, it is important that this should be well done previously. Nothing but the Double Michigan Plow would answer our purpose if we had an orchard to plant, and no depth less than *at least* ten inches. The yellow sub-soil, rich in inorganic materials, which has never been disturbed, should be brought up to the light of day and the fertilizing influences of the atmosphere. The roots of the trees can then extend themselves in search of moisture, or food, and the thrift and vigor of the orchard will be greatly promoted.

For list of varieties, we refer to the lists of the American Pomological Society, published in our former numbers.

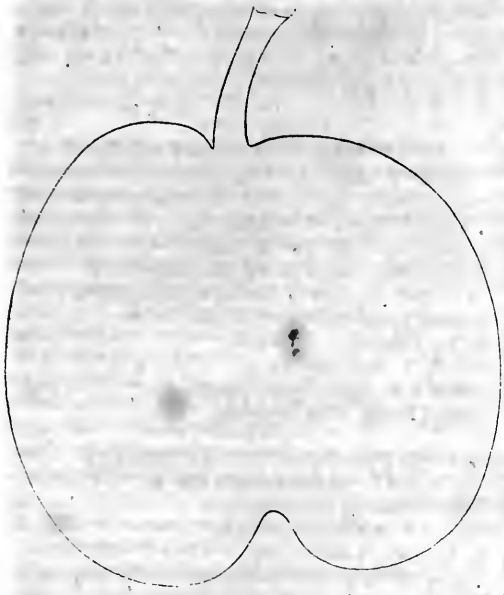
Bucks County Exhibition at Newtown,.....Oct. 2
Chester County " at West Chester,.....



VAN ASSCHE PEAR.

The above is a correct engraving of a fine Belgian Seedling Pear, which has been classed, by the American Pomological Society, among the new varieties which promise well, and in quality as very good.

The tree is a vigorous, erect grower, and an abundant bearer, succeeding well on the Quince. Size—large; three inches in diameter and the same in height. Form—obovate, obtuse, or flattened at both ends, largest near the eye; slightly ribbed occasionally. Stalk—one and a half inches long, rather slender, and slightly sunk. Calyx—small, in a wide, smooth, and rather shallow basin. Skin—smooth and fair; light yellow in the shade, sprinkled with dark dots; light red on the sunny side, sprinkled with carmine dots. Flesh—white, buttery, and melting. Flavor—somewhat of the *White Doyenne*. Tree—vigorous, erect; shoots dark. Season at Rochester, latter end of September and beginning of October.—*Horticulturist.*



STYER PEAR.

The following account of the above fine American Seedling Pear, was furnished to the Horticulturist by Alan W. Corson, of Montgomery county, Penn.

About sixteen years ago, Mr. Charles Styer, of White Plain township, Montgomery county, residing some fifteen miles from Philadelphia, engaged a man to make a fence for him. Mr. Styer happened, at the time, to say something about having some pear stocks grafted; on hearing which, the fence-maker said he knew where there was a fine kind, and would bring him some of the scions. He accordingly fulfilled his promise, and the scions were inserted; but it was never known where he obtained them, and he died without imparting the information. From these grafted trees, however, the variety has been propagated to some extent in that neighborhood.

The *Styer* is represented to be an abundant bearer of fair and perfect fruit, commanding a high price.

Fruit—medium size, about two and a half inches long by two and three-quarters wide. Form—roundish. Skin—green, becoming yellow, with many russet dots and markings. Stalk—three-fourths of an inch long, varying in thickness from one-sixteenth to one-eighth of an inch, and inserted in a small shallow cavity. Calyx—almost obsolete. Basin—narrow, moderately deep. Core—medium. Seed—blackish or very dark brown, short, rather plump, with a slight prominence or angle on one side of the broad extremity. Flesh—yellowish white, somewhat gritty at the core, buttery, melting. Flavor—exceedingly rich and perfumed. Period of maturity about the first of September.

List of Judges at the State Fair.

The disappointments hitherto experienced from non-attendance of Members of Committees originally appointed to award the premiums, have led to increasing, as in the present instance, the Judges to five, instead of three as formerly, with the view of securing at least a working majority of those appointed.

If any of the individuals on the following list should find that they cannot attend to the duties of the appointment, they will please notify me, to that effect, as early as possible.

☞ The Judges are requested to meet at the President's Tent at four o'clock P. M., on Tuesday, the first day of the Exhibition, to organize; when they will be furnished with the Premium List, also with a blank book to facilitate their duties.

JAMES GOWEN.

President of the Penna. State Ag. Society.

Mountairy, Germantown, August 15th, 1855.

Class No. 1---Cattle.

No. 1—SHORT HORNS.

Hon. Nathaniel Ewing, Uniontown, Fayette Co.
George Brinton, Chaddsford, Delaware Co.
John Worth, West Chester, Pa.
Jacob Frantz, Paradise, Lancaster Co.
Robert Bryson, Shepherdstown, Cumberland Co.

No. 2—DEVONS.

Paschall Worth, West Chester, Pa.
Wm. Stavely, Lahaska, Bucks Co.
Robert T. Potts, Norristown Pa.
Perry More, Spruce Creek, Huntingdon Co.
John Kelvy, Wilkinsburg, Alleghany Co.

No. 3—HEREFORDS.

Lewis P. Hoopes, West Chester Pa.
Wm. R. Gorgas, Harrisburg, Pa.
Thomas W. Bryson, Hogestown, Pa.
Samuel Dean, Williamsburg, Blair Co.
Craig Biddle, Philadelphia.

No. 4—AYRSHIRE.

A. R, McIllvaine, Brandywine Manor, Chester Co.
John C. McAllister, Harrisburg, Pa.
Caleb Carmalt, Friendsville, Susquehanna Co.
Samuel Buckman, Dolington, Bucks Co.
Enos Benner, Sumneytown Montgomery Co.

No. 5—HOLSTEIN.

John S. Isett, Spruce Creek, Huntingdon Co.
John Wallace, Newville Cumberland Co.
Abner Rutherford, Harrisburg.
James M. Kinkhead, Yellow Springs Blair Co.
Jolly Longshore, Newtown, Bucks Co.

No. 6—ALDERNEY.

Gen. George M. Keim, Reading Pa.
Wm. M. Henderson, Carlisle, Cumberland Co.
Henry Drinker, Montrose, Susquehanna Co.
Hugh Craig, Shippensburg Pa.
A. P. Wilson, Huntingdon Pa.

No. 7—NATIVES OR GRADES.

William H. Holstein, Norristown Pa.
David S. Kerr, Kerrsville Cumberland Co.
Dr. E. V. Dickey, Oxford Chester Co.
Martin Bell, Sabbath Rest, Blair Co.
Gen. William Bell, Patterson Mifflin Co.

No. 8—WORKING OXEN.

Wm. M. Watts, Carlisle, Cumberland Co.
George Blight, Philadelphia.
George M. Lauman, Harrisburg.
J. H. Kurtz. Lancaster.
Michael Cocklin, Shepherdstown Pa.

No. 9—FAT CATTLE.

Henry P. Robeson, Reading Furnace, Berks Co.
John Foster, Old Fort, Centre Co, Pa.
Christian B. Herr, Jr., Lancaster, Pa.
John W. Craighead, Carlisle.
Abraham Peters, Millerstown, Lancaster Co.

No. 10—MILCH COWS.

Hon. John Strohm, New Providence, Lanc. Co.
Anthony Bolmar, West Chester Pa.
Edward Kohler, North White Hall, Lehigh Co.
Dr. James A. McCrea, White Marsh, Montg'y Co.
Hon. R. R. Reed, Washington Pa.

No. 11—FOREIGN IMPORTED CATTLE.

John Evans, York, Pa.
Joseph Cope, West Chester, Pa.
Paschall Morris, Philadeldhia.
Aaron Clement, Philadelphia.
A. L. Pennock, Jr., Upper Darby, Delaware Co.

No. 11½—SPECIAL PREMIUMS.

William Heiser, Chambersburg, Pa.
Owen Sheridan, Chestnut Hill, Philadelphia.
Martin Newcomer Shady Grove, Franklin Co.
Augustus Boyd, Elizabeth Furnace, Lancaster Co.
James C. Cornell, Newtown Bucks Co.

Class II.

No. 12—HORSES AND MULES.

Gov. David R. Porter, Harrisburg.
Gen. James Irvin, Bellfonte, Centre Co.
Col. William J. Lieper, Philadelphia.
Amos E. Kapp, Northumberland, Pa.
Michael Kramer, Danville, Pa.

No. 13—FOREIGN IMPORTED HORSES.

Hon. George W. Woodward, Wilkesbarre, Pa.
Gen. William H. Richardson, Richmond, Virginia.
Gen. George Cadwallader, Philadelphia.
John H. Berryhill, Harrisburg.
Dr. William A. Irvin, Warren, Pa.

Class No. III.

No. 14—SHEEP AND WOOL.

Hon. John H. Ewing, Washington, Pa.
A. T. Newbold, Philadelphia.
Henry Hoffman, Harrisburg.
James Slocum, Brownsville, Fayette Co.
James Thornton, Jr., Byberry, Philadelphia.

No. 15—SWINE.

Thomas Wood, Penningtonville, Chester Co.
S. S. Rutherford, Harrisburg, Pa.
Richard Parker, Carlisle.
John McDonough, Elizabeth Allegheny Co.
Isaac Newton, Philadelphia.

No. 16—POULTRY.

David Taggart, Northumberland, Pa.
William F. Packer, Williamsport Pa.
Dr. A. L. Elwyn, Philadelphia.
A. J. Jones, Harrisburg,
Adrain Cornell. Newtown, Bucks.

Class No. IV.

No. 17—PLOWS AND PLOWING MATCH.

Hon. A. O Heister, Harrisburg.
William A. Kerr, Kerrsville Cumberland Co.
David Mumma, Jr., Harrisburg,
George Boal, Boalsburg, Centre Co.
Benjamin Kelly, Wilkinsburg, Alleghany Co.

Class No. V.

NO. 18—FARM IMPLEMENTS, NO. 1.

Gen. E. W. Sturdevant, Wilkesbarre, Pa.
James Cresson, Spring Mill, Montgomery Co.
Andrew M. Eastwick, Philadelphia.
J. Lacey Darlington, West Chester.
Paul A. Way, Sewickleyville, Alleghany Co.

NO. 19—FARM IMPLEMENTS, NO. 2.

Thomas P. Knox, Norristown, Pa.
A. Boyd Hamilton, Harrisburg.
Dr. W. W. Dale, Carlisle.
Daniel Herr, Martinsville, Lancaster Co.
Samuel Elliott, Northumberland.

NO. 20—FARM IMPLEMENTS AND MACHINERY, NO. 3.

John C. Cresson, Philadelphia.
Charles B. Trego, Philadelphia.
A. R. Fiske, Shamokin, Pa.
Joseph Harrison, Jr., Philadelphia.
David Cockley, Lancaster.

NO. 21—LEATHER AND ITS MANUFACTURES.

Joseph Konigmacher, Ephrata, Lancaster Co.
Gen. Michael Doudel, York, Pa.
A. S. Naudain, Philadelphia.
H. W. Freas, Lewisburg, Union Co.
P. McIntyre, York, Pa.

Class No. VI.

NO. 22—DAIRY, SUGAR AND HONEY

Hon. William Jessup, Montrose, Susquehanna Co.
Hon. John Stewart, Carlisle, Pa.
Hon. Jona. McWilliams, Stover's Place, Hunt Co.
James Taggart, Northumberland.
Joseph Grey, Harrisburg.

Class No. VII.

No. 23—FLOUR AND CORN MEAL.

Samuel Small, York, Pa.
James McCully, Pittsburg, Pa.
Stephen Miller, Harrisburg.
Benjamin Snavely, Lancaster, Pa.
Charles Porter, Alexandria, Huntingdon Co.

No. 24—GRAIN AND SEEDS.

David Landreth, Philadelphia.
Daniel C. Getty, Norristown, Pa.
Dr. A. L. Kennedy, Philadelphia.
Aaron McClure, Harrisburg.
John F. Herr, Strasburg, Lancaster Co.

No. 25—VEGETABLES.

Hon. Ellis Lewis, Philadelphia.
Hon. John C. Knox, Germantown, Philadelphia.
Charles Cook, Danville, Pa
John R. Eck, Milton, Pa.
David Coble, Mechanicsburg, Pa.

Class No. VIII.

No. 26—DOMESTIC AND HOUSEHOLD MANUFACTURES.

Hon. Simon Cameron, Middletown, Pa.

Mrs, Gov. Shunk, Harrisburg.
Mrs. Eliza B. Walker, Elizabeth, Alleghany Co.
Mrs. Mary H. Espy, Harrisburg.
Mrs. Richard McAllister, Harrisburg.
Miss C. M. Rehrer, Harrisburg.

No. 27—MANUFACTURES OTHER THAN DOMESTIC (excepting musical instruments.)
David Longenecker, Lancaster.
Hon. Lyon Lemberger, Jonestown, Lebanon Co.
Charles Kelly, Kellysville, Delaware Co.
Abraham Frainer, Harrisburg.
Joseph B. Priestly, Northumberland.

MUSICAL INSTRUMENTS.
Mrs. William Sergeant, Philadelphia.
Mrs. William H. Miller, Harrisburg.
Miss Sophia Jones, Harrisburg:

Class No. IX.

No. 28—FIELD CROPS. (Report to be made on third Tuesday of January next.)
Hon. A. O. Hiester, Harrisburg.
Jacob S. Haldeman, New Market, York Co.
Rudolph F. Kelker, Harrisburg.
Hon. John Strohm, New Providence, Lanc. Co.
John P. Rutherford. Harrisburg.

Class. No. X.

No. 29—FRUIT
Hon. J. S. Black, Somerset, Pa.
Gov. James Pollock, Harrisburg.
William G. Waring, Boalsburg, Centre Co.
John Murdoch, Jr., Pittsburg.
Isaac B. Baxter, Philadelphia.

No. 30—FLOWERS, PLANTS AND DESIGNS.
Gen. Robert Patterson, Philadelphia.
Jacob B. Garber, Columbia, Pa.
H. B. Musser, Sunbury, Pa.
Dr. William D. Brinckle, Philadelphia.
Col. David W. Patterson, Lancaster.

Class No. II.

No. 31—STOVES.
Isaac G. McKinley, Harrisburg.
S. R. Slaymaker, York, Pa.
David G. Swartz, Lancaster.
David Stewart, Colerain Forge, Centre Co.
Henry Gilbert, Harrisburg, Pa.

No. 32—SILVERWARE, GLASS & GLASSWARE, CUTLERY AND BRITANNIA.
Gov. William Bigler, Philadelphia.
Hon. Walter H. Lowrie; Pittsburg, Pa.
Samuel Walker, Elizabeth, Alleghany Co.
Frank. Gardener, Carlisle, Pa.
Major William L. Dewart, Sunbury, Pa.

Class No. XII

No. 33—BACON AND HAMS.
Gen. William Ayers, Harrisburg.
Philip Dougherty, Harrisburg.
James Evans, Lancaster.
D. Brantigam, Northumberland.
James S. Espy, Harrisburg.

No. 34—INVENTIONS.
Geo. Blight Browne, Gwynedd, Montgomery Co.
Algernon S. Roberts, Philadelphia.
W. H. Towers, Philadelphia.
W. T. Forsythe, Northumberland.
James Wardrop, Pittsburg, Pa.

No. 35—MISCELLANEOUS ARTICLES & FINE ARTS.
Gov. William F. Johnston, Pittsburg.
Thomas H. Burrowes, Lancaster.
W. P. Withington, Shamokin, Pa.
Hon. Isaac E. Hiester, Lancaster.
George A. Bayard, McKeesport, Alleghany Co.

No. 36—FARM BUILDINGS.
H. N. McAllister, Bellefonte, Centre Co.
Alexander Hamilton, Harrisburg, Pa.
Gen. Ephraim Banks, Lewistown, Pa.
Thomas Baumgardner, Lancaster, Pa.
D. M. Boyd, Shamokin, Pa.

Living in the Country,—Experience of Mr. and Mrs. Sparrowgrass.

It is a good thing to have an old-fashioned fire-place in the country; a broad-breasted, deep-chested chimney-piece, with its old-fashioned fender, its old-fashioned andirons, its old-fashioned shovel and tongs, and a goodly show of cherry-red hickory, in a glow, with its volume of blue smoke curling up the thoracic duct. "Ah! Mrs. Sparrowgrass, what would the country be without a chimney corner and a hearth? "Do you know," said I "the little fairies dance upon the hearth-stone when an heir is born in a house?" Mrs. Sparrowgrass said she did not know it, but, she said, she wanted me to stop talking about such things. "And the cricket," said I, "how cheerful its carol on the approach of winter." Mrs. S. said the sound of a cricket made her feel melancholy. "And the altar and the hearth-stone: symbols of religion and of home! Before one the bride—beside the other the wife! No wonder, Mrs. Sparrowgrass, they are sacred things; that mankind have ever held them inviolable, and preserved them from sacrilege, in all times, and in all countries. "Do you know," said I, "how dear this hearth is to me?" Mrs. Sparrowgrass said, with hickory wood at eight dollars a cord, it did not surprise her to hear me grumble. "If wood were twenty dollars a cord I would not complain. Here we have everything—

> ——content,
> Retirement, rural quiet, friendship, books,
> Ease and alternate labor, useful life;"

"and as I sit before our household altar," said I, placing my hand upon the mantle, "with you beside me, Mrs. S., I feel that all the beautiful fables of poets are only truths in parables when they relate to the hearth-stone—the heart-stone, I may say, of home!"

This fine sentiment did not move Mrs. Sparrowgrass a whit. She said she was sleepy. After all I begin to believe sentiment is a poor thing in the country. It does very well in books, and on the stage, but it will not answer for the rural districts. The country is too genuine and honest for it. It is a pretty affectation, only fit for artificial life. Mrs. Peppergrass may wear it with her rouge and diamonds in a drawing room, but it will not pass current here, any more than the stimulated flush of her cheeks can compare with that painted in those of a rustic beauty by the sun and air.

"Mrs. Sparrowgrass," said I, "let us have some nuts and apples, and a pitcher of Binghamton cider; we have a good cheerful fire to night, and why should we not enjoy it?"

When Mrs. Sparrowgrass returned from giving directions about the fruit and cider, she brought with her a square paper box full of garden seed. To get good garden seed is an important thing in the country. If you depend upon an

agricultural warehouse you may be disappointed. The way to do is, to select the best specimens from your own raising; then you are sure they are fresh, at least. Mrs. Sparrowgrass opened the box. First she took out a package of seeds, wrapped up in a newspaper—then she took out another package tied up in brown paper—then she drew forth a bundle that was pinned up—then another that was taped up—then another twisted up—then out came a bursted package of watermelon seeds—then a withered ear of corn—then another package of watermelon seeds from another melon—then a handful of split okra pods—then handsful of beans, peas, squash seeds, melon seeds, cucumber seeds, sweet corn evergreen corn, and other germs. Then another bursted paper of watermelon seeds. There were watermelon seeds enough to keep half the country supplied with this refreshing article of luxury. As the treasures were spread out on the table, there came over me a feeling that reminded me of Christmas times, when the young ones used to pant down stairs, before dawn, lamp in hand, to see the kindly toy-gifts of Santo Claus. Then the Mental Gardener, taking Anticipation by the hand, went forth into the future garden; the peas sprouted out in round leaves, tomato put forth his aromatic spread; sweet corn thrust his green blades out of many a hillock; lettuce threw up his slender spoons; beans shouldered their way into the world, like Æneases, with the old beans on their backs; and watermelon and cucumber, in voluptuous play, sported over the beds like truant school boys.

> "Here are sweet peas, on tiptoe for a flight;
> With wings of gentle flush o'er delicate white,
> And taper fingers catching at all things,
> To bind them all about with tiny rings."

"Now," said I, "Mrs. Sparrowgrass, let us arrange these in proper order; I will make a chart of the garden on a piece of paper, and put everything down with a date, to be planted with its proper time." Mrs. Sparrowgrass said she thought that an excellent plan. "Yes," I replied, tasting the cider, "we will make a garden to night on paper, a ground plan, as it were, and plant from that; now, Mrs. S. read off the different packages." Mrs. Sparrowgrass took up a paper and laid it aside, then another, and laid it aside. "I think," said she, as the third paper was placed upon the table, "I did not write any names on the seeds, but I have not the least doubt I can easily tell them apart; these," said she, "are watermelons." "Very well, what next?" "The next," said Mrs. S., "is either musk-melon or cucumber seed." "My dear," said I, "we want plenty of melons, for the summer, but I do not wish to plant half an acre of pickles by mistake; can't you be sure about the matter?" Mrs. S. said she could not. "Well, then, lay the paper down and call off the next." "The next are not radishes, I know," said Mrs. S.; they must be summer cabbages." "Are you sure now, Mrs. Sparrowgrass," said I, getting a little out of temper. Mrs. S. said she was sure of it, because cabbage seed looked exactly like turnip seed. "Did you save turnip seed also," said I. Mrs. Sparrowgrass replied, that she had provided some, but they must be in another paper. "Then call off the next; we will plant them for cabbages, whether or no." Here *is* a name," said Mrs. S., brightening up. "Read it," said I, pen in hand. "Watermelons—not so good,' said Mrs. S. Lay that paper with the rest and proceed." "Corn," said Mrs. S. with a smile. "Variety?" "Pop, I am sure." "Good, now we begin to see daylight." "Squash." said Mrs. Sparrowgrass. "Winter or Summer?" "Both." Lay that paper aside, my dear." "Tomato." "Red or yellow?" Mrs. Sparrowgrass said she had pinned up the one and tied up the other. to distinguish them, but it was so long ago, she had forgotten which was which. "Never mind," said I, "there is one comfort, they cannot bear without showing their colors." "Now for the next." Mrs. S. said upon tasting the tomato seed, she was sure they were bell-peppers. "Very well, so much is gained, we are sure of the capsicum. "The next" "Beans," said Mrs. S.

There is one kind of bean, in regard to which I have a prejudice. I allude to the asparagus bean. a sort of long-winded esculent, inclined to be prolific in strings. It does not climb very high on the pole, but crops out in an abundance of pods, usually not shorter than a bill of extras, after a contract; and although interesting as a curious vegetable, still not exactly the bean likely to be highly commended by your city guests, when served up to them at table. When Mrs. S., in answer to my question, as to the particular species of bean referred too, answered, "Limas," I felt relief at once. "Put the Limas to the right with the sheep, Mrs. S., and as for the rest of the seeds, sweep them into the refuse basket. I will add another stick to the fire, pare an apple for you, and an apple for me, light a cigar, and be comfortable. What is the use of fretting about a few seeds more or less? But, next year, we will mark all the packages with *names*, to prevent mistakes, won't we, Mrs. Sparrowgrass?"—*Putnam's Monthly.*

Prices of Flour for Twenty Years.

IN THE MONTHS OF JANUARY, FEBRUARY, MARCH AND APRIL.

	January.	February.	March.	April.
1836,	7 25	7 50	7 37½	7 50
1837,	10 12½	11 00	11 25	10 75
1838,	8 75	8 25	8 00	8 25
1839,	8 87½	8 93¾	9 00	8 50
1840,	5 87½	6 37½	5 75	5 62½
1841,	4 93¾	4 87½	4 75	4 92¾
1842,	5 87½	6 43¾	6 12½	6 25
1843,	4 56¼	4 37½	4 75	5 12½
1844,	4 62½	4 81¼	4 93¾	4 90¾
1845,	4 68¾	4 84¾	4 81¼	4 75
1846,	4 66	4 56	4 76	4 62
1847,	5 12	7 00	7 12½	7 62
1848,	6 87	6 25	6 12½	5 75
1849,	6 00	5 87	6 00	5 60
1850,	4 50	5 50	5 56	5 50
1851,	5 00	5 00	4 75	5 00
1852,	4 56	4 62	4 52	4 31
1853,	5 56	5 50	5 00	4 56
1854,	7 87	9 60	9 00	9 75
1855,	12 00	12 50	11 75	13 00

—*Journal N. Y. State Ag. Society.*

Barbraham Sheep Letting.

The annual letting of Jones Webb's South Down rams came off on the 22d ult. There were 207 rams penned, and 77 fell under the hammer. The total produce of the letting was £1,983,9s, the average price being £25, 15,2 ($123,62) each. This is a higher average price than any previous year. The second ram led into the ring excited a most spirited competition, the last biddings being between the Agent of the Duke of Richmond and Mr. Overham of Norfolk. It was knocked down to the former at the uprecedented price of 170 guineas ($856,80.) Mr. Overman obtained the next higest ram at 130 guineas. Last year the highest price paid was 102 guineas ($514) by Mr. Lugar of Hargrave, Eng. In 1853, Mr. Jonathan Thorne, Thorndale Duchess Co., N. Y., carried off the highest priced sheep for $655 Up to that time, we believe, this was the highest figure that a South Down sheep ever let before. Some of Bakewell's inproved Leicesters have brought a little more, if we recollect rightly. Will some one inform us on this point.—*Country Gentleman.*

PENNSYLVANIA FARM JOURNAL.

VOLUME 5. PHILADELPHIA, OCTOBER, 1855. NUMBER 10.

Compost Heaps.

[CONTINUED FROM PAGE 262.]

Distillery Refuse.—Putrescent draff (distillery grains) makes an excellent manure. If well trodden into a pit, and covered up from the air, it will keep for years, and be as good food for cattle as when new; but exposed to atmospheric action, putridity is the speediest result. When not allowed to become dry during the fermenting process, it is a very powerful fertiliser; but it is better to use it mixed with some other substances than alone. If not very severely rotted, it may be advantageously mixed with ordinary manure, while otherwise it will be better to use it in ordinary composts. It is thrown out in some distilleries into waste or sluice-ponds, and consequently the mud deposited in such reservoirs is justly regarded as a powerful manure. I have seen cases in which land has been very greatly improved by being irrigated with refuse water of distilleries, containing in suspension large quantities of putrid draff. One case in particular may be mentioned, in which the benefits derived from such treatment were much greater than can well be estimated. In the vicinity of a large distillery, on a fully lower surface-level, a field of flat land was laid down to grass perhaps about twenty years ago. The annual value of the ground at that time would not be more than 25s. per acre. Some time subsequently the discharging ditch of a refuse-pond connected with the distillery was turned into the field, and the farmer spared no pains in making the most of the liquid which it brought. Open feeding drains were carried through the field in various directions, and from them at right and left branched off shallow triangular gutters over the whole surface, like so many arteries carrying the life's-blood to every part. The water brought large quantities of putrid grains, mud, and other refuse matters, and left them on the surface of the field. After many years of incessant attention to this fertile source of manurial supply, the farmer is now reaping a rich harvest for his trouble. The land at the present time, if let in pasture, would give *at least* £4 per acre; and as it is used for dairy cows, a much greater number of which can now be kept on the farm than would otherwise have been the case, it is undoubtedly worth a much higher rent to the tenant. This is just a case in which compost has been used in a liquefied form, the nearest of all others to the mode of manuring which plants seem by nature to demand. Distillery-wash, or what is termed *dreg* in some districts, is also a valuable fertiliser. When applied in a putrid state, and in large quantities to clay soils, it has the effect of binding them rather much, but in tolerably light or well-pulverised land this objection to its use is obviated. For pasture, even on the stiffest land, it is generally equal in fertilising power to the best tank-liquid. I have often used it for this purpose, giving at the rate of about 8 tons per acre. The amount which this cost was 8s. as purchase price, with about an equal sum for cartage. This is not the most profitable way, however, to use it, as I found by experience. The best way is to form a pretty large earth compost, and give an occasional drenching with the dreg, which, when old, is a strong slab mixture. When the heap consists of various kinds of earthy and refuse matters, and has been turned over and well soaked for several times, the contents will be found of a greasy black nature, and on trial little inferior to many kinds of farmyard dung. Even clay-rubbish, when treated in this manner, with the addition of the drainings of cattle-stalls, will be found valuable manure.

As a manure for gooseberry bushes, nothing can be better than earth composts, such as rotten vegetable matter soaked with dreg. I have several times had practical proof of this in extensive orchards. The quality of dreg varies considerably, being often so watery as to be almost worthless as a manure, while at other times it is thick and muddy in appearance. Generally speaking, however, old liquid is thick and of considerable value. Taking Professor Anderson's analyses of what appears to have been a superior quality of dreg, we have in the imperial gallon—

	Grains.
Organic matter,	4127.9
Ash,	276.1
Total solids,	4404.0

The 276.1 grains of ash contained—

Earthy phosphates,	73.7
Phosphoric acid in combination with alkalis,	61.0
Potash,	34.4
Soda,	52.3
Sulphuric acid, chlorine, &c.,	54.7
	276.1

—Quantity of nitrogen in the organic matters, 243 grains.

Tan Refuse.—This principally consists of the spent oak or other bark, used in tanning operations. In the state that it comes from the tan-pit it is a worthless substance, but as it ferments very readily, with proper management it may be made a valuable manure to use with other matters. In the neighborhood of Edinburgh it used to sell at 1s., but now it is only 3d. a ton, and there is no demand for it. This no doubt is to be attributed to the want of success which attended its use; but then, if the system of preparation was bad, the results of its use could not be good. In preparing it for use, it was generally *saturated* with sewage water, holding in suspension large quantities of mud, but not *fermented;* hence, on being used, the slightest evaporation left little better than when taken from the tan-yard. Peat, from its bibacious nature, would have been much better adapted

for this process than hard gritty bark. To render the latter a profitable manure, it should first be well fermented by itself; and after the hard chips are sufficiently reduced, it may be mixed for further preparation with other substances, such as stall-manure or earth; or it may be used with advantage as a covering for lime heaps. For whatever purpose it may be applied, if *properly prepared*, it will be an excellent dressing to apply to stiff land, as it acts both chemically and mechanically, and, at all events, it is surely worth 3d. a cart. All the refuse animal matters of tan-works go to the glue-manufacturers and plasterers. Somewhat similar to tanners' bark, we have sawdust, which, though difficult to decompose, makes an excellent auxiliary to the ordinary manures of the farm. Once thoroughly fermented and mixed with other manurial matters, it will be found of great use in improving the mechanical texture of clay soils as well as rendering them more fertile. So long as it can be got in wood-yards for nothing it is well worth the attention of the farmers.

Gas-work Refuse.—Gas-lime differs from ordinary lime, only in consequence of having imbibed, during the purification of the gas, sulphuretted hydrogen and more or less ammoniacal salts. In numberless instances it has been used with great advantage in compost-heaps. In the neighborhood of Edinburgh it has been extensively employed by some of the most spirited farmers, among whom Mr. Finnie may be mentioned as one of the first to direct attention to it. The quantity annually produced at the Edinburgh Gas-Works amounts to about 900 tons. Formerly it used to be given for the carting away, but now it is sold at 3d. a ton, and the demand is greater than can well be supplied. Some farmers, who have applied liberal dressings, state that the succeeding crops have been better than after the ordinary applications of farmyard manure; others affirm that, compared with newly-burned lime, it is in every respect superior. In Glasgow the refuse lime is sold at 1s. 6d. to 2s. 6d. a ton; and at Kirkcaldy it brings 1. 6d. per ton. Some have applied it to red land, like caustic lime; but it will be found much more profitable to compound it with earth, peat, couch-grass, or other vegetable matters. The ammoniacal water of gas-works, in large cities, is generally used in manufactories, for the preparation of commercial ammonia, but in small works, in country villages, it is often thrown out with the tar. It is a most valuable fertiliser, containing, in some cases, as much as 1½ lbs. of sal-ammoniac in the gallon. It may be used to promote the fermentation of peat or couch heaps, or may be mixed with any earthy or carbonaceous composts. In England it has been used, in some cases, in conjunction with sawdust, and gave very beneficial results. If applied to grass land in too large quantities it is liable to scorch the surface, but, diluted, it produces fine dark-colored herbage. The lime water of gas-works is also a potent fertiliser, but hitherto it has been little used. The lime employed to purify the gas is, to a certain extent, liquefied; and after considerable evaporation, a quantity of fluid, somewhat viscid, and smelling strongly of hydro-sulphuret of ammonia, is run off to an underground tank. This lime-water, about 500 tons of which are annually produced at the Edinburgh Gas-Works, has hitherto been given for the carting away. One or two farmers have used a good deal of it, but very large quantities are still allowed to run waste. If mixed with bibulous substances, more especially if they are capable of being fermented, an excellent compost for use, along with other manures, will be produced. Gas-tar may also be employed in a similar manner with advantage, only it is necessary to use it rather cautiously and along with other substances, or it may injure the crops to which it is applied.

Sewerage of Cities.

One of our daily papers recently well observed in relation to the great loss to agriculture from the waste of city drainage, "*that nature never wastes any thing.* She transmutes but does not destroy, economises, but does not squander. Great cities, when they come to be properly managed, will give back to the country as much as they take from it, instead of being as now constant drains upon its fertility."

In London works are now proposed to be constructed by a Mr. Stothert, by which the drainage of that city, instead of being wasted as at present, may be made available for agricultural purposes. He estimates the annual expense of collecting, mixing and distributing the sewerage of that vast metropolis at about a million of dollars, and that the receipts for farmers would be twenty millions. The total amount of liquid sewage daily from London is estimated at 150,000,000 gallons, yielding 5,000 tons of solid matter, and sufficient to fertilize ten million acres yearly, and at a much cheaper rate than by guano.

While we condemn the thriftless farmer in allowing the drainage from his farmyard to pass away, and be forever lost to the soil, it is also true that the sewage of large cities would be equally valuable, and contains the very elements for reinvigorating the soil and restoring what has been taken away by continued cropping. The time will no doubt come when Philadelphia, New York, and other large cities, will take measures to secure to farmers the great treasure now annually wasting in the form of sewage. Bad habits in agriculture, as in every thing else, grow strong by reason of use, and we become so accustomed to a fixed routine as to at last conclude there is no way but the *good old way.*" We crop for half a century three to four inches of earth, and when it is thoroughly exhausted and unproductive, move out to the far west in search of new fields and new farms on which to pursue the same system, entirely losing sight of the fact that by plowing two inches deeper we may turn up a *new farm* on our own paternal acres. So with manures. We neglect the sewage of our cities and the drain of our barnyards, and go to Peru, some thousands of miles off, for the means of renovating our exhausted lands. Is the world really getting *wiser* as it grows *older?*

Imported Cattle.

The Oliver Jordan arrived at Philadelphia on the 28th ult. with forty head of cattle—Durhams, Ayrshires and Alderneys—the most important contribution to our stock ever before made in a single voyage. The Ayrshires and Alderneys, and a portion of the Durhams, were the importation of Mr. Alexander, of Kentucky, whose efforts to improve the breed of cattle in the United States have been attended with the best results. The residue, which are Durhams, were imported by Mr. Lorillard Spencer and Mr. Lewis G. Morris, of Westchester, N Y., Mr. Moses J. Becar, of Long Island, and Mr. David Brooks, of Avon, Livingston county. The animals were purchased chiefly, if not wholly, at the Tanqueray sale, as it is called, last spring. Mr. Tanqueray, now deceased, owned an estate of five or six hundred acres of land, about six miles from London, known as Brent Lodge, or the Decoy Farm, Hendon. He was a distiller, of immense wealth, who had picked up the best stock he

could find in the different herds in England, without regard to price. He had accumulated through such efforts a noble herd, the best in many respects collected together in England. The sale of his stock was the occasion for the assemblage of the most experienced cattle breeders of England and the United States, and large prices were realized. A single animal produced four hundred and eighty guineas, and the total of one sale was nearly fifty thousand dollars. Mr. Spencer was the purchaser of two superior animals—Hope and Hopeful. Mr. Brooks, of Livingston—a wealthy and practical farmer of the Genesee Valley—was the purchaser of three, and Messrs. Morris and Becar of eight.

The latter purchases have arrived at Westchester, N. Y., and are represented as superb animals, in high condition. They are cows and heifers and one calf, the produce of one of the cows during the voyage, which has been called the Oliver Jordan, after the vessel.

Having had an opportunity of inspecting the stock noticed above, we can confirm the statement that they are one of the most valuable importations ever made into the country. They were accompanied by a regular herdsman, and although the voyage was a very rough one, no accident happened, and they all arrived in fine condition, two calves being dropped on the passage.

These animals showed what skillful and scientific breeding can accomplish to improve shape, size and maturity—some of them being as nearly perfect models of beauty as could well be imagined. One cow had been purchased at $2500, which, with the enormous prices of several others, seemed to prove that the perfection they have been brought to is not the result of mere chance, but skill and science long and perseveringly directed.

There are probably now in the United States a sufficient number of the very best animals of different breeds to make farther importations unnecessary at such extravagant rates. It has been remarked by English breeders, that Americans have taken away their very best stock, and have been the most spirited buyers at their public sales. We should not be surprised if some day the tables were to be turned, and English breeders come here to obtain good crosses.

Uniformity in Breeding.

Unless intelligent and thoughtful men devote themselves to it, the stock of the country will not be improved. It requires the nicest perception, united with a perfect mastery of principles and details, to fix a true standard and attain it. The smallest errors should be corrected. Apparently slight causes, operating during successive years, produce very marked results, and in the end change entirely the whole character and configuration. With perhaps some partial exceptions, we have accomplished little in this country worthy of especial commendation, except by the introduction of *foreign* breeds. The *Morgan* and *Black Hawk* horses, originating in a cross of different breeds, have, to a certain extent, a specific and definable character—they belong to this country.

Conceding all that can be reasonably claimed, it remains true that *the mass of American Farm Stock is a jumble of all sorts, propagated without a purpose and without a plan.* Crosses are made as "economy" and convenience suggests. The nearest or the cheapest stock animal is used, careless of results. Leaving, for the present, various branches of the subject, we will conclude with some remarks upon *uniformity* in breeding.

There are more reasons than could be readily offered why the individuals composing a particular flock or herd should bear a close resemblance to each other. No better evidence of skill and care in breeding can be given. Any blundering operator may have occasionally a fine animal, but to breed *even* is the work of time and attention. It being known that a breeder has a certain description of animals, those wishing that class are advised where to go. A reputation is established. Competition among buyers will bring up the price.

Similarity of disposition, size, color and contour in working oxen and horses will be appreciated—"*matched*" *teams* have a market value often expressed by very high figures. Uniformity should be *local* or *sectional.* Certain districts should be known as the home of particular breeds. This is so in England and other countries; soil, climate, &c., should control the selection. This plan adopted, buyers and sellers would find it very convenient, but the great consideration remains to be stated: *No man can breed with any certainty of favorable results without breeding in a definite way, following a particular model, and adhering to it through successive generations.* A race of milkers can be obtained only by selections from milking families, and by crossing them upon stock nothing deficient in milking qualities. Workers, and other varieties, follow the same law of hereditary descent. H. T. B., *in Rural New Yorker.*

American Triumph in Europe.

The United States contributions to the great exhibition at Paris have not made much show, but, on being put to the test, it seems they are of a very valuable character. The New York Tribune gives the subjoined account of the trials of the machines for threshing, reaping and mowing:

The net results of a half hour's earnest work by the rival thrashers, and by six men with flails, (estimated as a force equal to one of the machines,) is as follows:

Six thrashers with flails,	- -	60	litres of wheat.
Pitt's American Thrasher,	-	740	" "
Clayton's English "	- -	410	" "
Dunoir's French "	- -	250	" "
Pinet's Belgian "	- -	150	" "

[The French *litre* is a little less than a quart: 36 *litres* make a bushel, very nearly.]

Assuming, in the absence of data, that these machines are of equal cost and are worked with equal force, and that the average expense of thrashing and winnowing wheat in the old way is ten cents per bushel, the Belgian thrasher reduces this to about four cents, the French to three, the English to two, and the American to barely more than *one cent* per bushel, or one-tenth of the cost of flail-thrashing in the old way. This year's crop of wheat, rye and buckwheat in the United States can hardly fall below 200,000,000 bushels, which could only be separated from the straw and chaff in the old way at a cost of $20,000,000. The Belgian thrasher, if in common use, would reduce this to $8,000,000, the

French to $6,000,000, the English to $4,000,000, and the American to some $2,500,000—a clear national saving of $17,500,000 per annum in the cost of thrashing and winnowing our small grain alone! And the saving to France from the substitution of Pitt's thrasher for the best of her own invention can hardly be less than ten millions of dollars per annum.

So with regard to reapers. The time required for cutting equal portions of heavy and badly lodged wheat by the several European machines, ranged from half an hour to an hour and a half, while the three American machines cut an equal area as follows:

Hussey's, (with Wright's improvements,) in 18 minutes.

Manny's, (an Illinois machine,) in 16 minutes.

McCormick's, (operated by McKenzie,) in 10½ minutes.

We venture to say that this last was the quickest time ever made in cutting grain, even though we assume that the area was not more than two-thirds of an acre. And, without at all detracting from the merits of the victorious machine, we believe a share of the credit is due to J. C. McKenzie—a thorough Yankee, who won the triumph for McCormick in England, at Mechi's farm, in 1851—and who, as a manager and operator of this class of machinery, has no superior. There are probably not five men living who could have raked off the cut grain into sheaf-armfuls at the unprecedented speed of McCormick's reaper in the recent trial.

It thus appears that, in the public official testing of both reaping and thrashing machines, open to all the world, and in which all the good machines of Europe must necessarily have been represented, *every American machine entered, proved immensely superior to every European machine.* That is to say: of our four reaping or thrashing machines sent to Paris to compete with the thirty or forty best machines of Europe, each one of our four proved superior to the best rival machines that Europe could produce! So complete a national triumph was never before achieved in any world wide arena of Industrial competition.

Breeds of Poultry.

However extravagant and suddenly an excitement may be gotten up in respect to the merits of any new breed of animals, whether poultry, pigs, or neat cattle, it may be received as a truth that "*when the people think long they mostly think right.*" Public opinion at last generally settles down about where it ought to be, and affixes to each breed its proper position. The Shanghai, or Cochin China, fever appears to have entirely abated in England. At the recent exhibition of the Royal Agricultural Society at Carlisle, the entries of Cochin Chinas were but fifteen, having been fifty of the previous year, and the result would seem to be, as expressed by the editor of the English Agricultural Gazette, "that the Dorking maintains his ground as the most valuable breed we possess, and the game fowl also much esteemed." The entries of the different breeds were as follows: Spanish fowls 17, Dorkings 51, Cochin Chinas 15, Malay 3, Game 32, Hamburgs 27, Polish 9.

The above may be taken as an index in England of popular feeling with respect to the various breeds.

Great Drover.---Jacob Strawn.

The papers frequently mention this wonderfully successful farmer and drover, who emigrated, some time since, from Muskingum county, in this State, to Illinois. In a letter to the *Tribune*, a correspondent thus tells of him:

In the vicinity of Jacksonville is the most noted man in Illinois, not excepting the "little giant." I am told that he is a native of Muskingum county, Ohio, and that he emigrated to the prairies many years ago, with money enough to buy a quarter section of land. He is of medium stature, but his frame has been of immense power and toughness. Sometimes, when he has been purchasing cattle, he has accomplished the almost incredible feat of riding on horseback nine successive days and nights, with no sleep but what he got in the saddle. His judgment of cattle is almost infallible. He will ride into a drove of cattle, glance over it with incredible quickness, hunting the number, singling out the average ox, computing from him the whole drove, and offering a price for the whole more promptly than many would for one ox. He has the reputation of being a fair dealer, and will not haggle with those who sell to or buy of him. If his customers like his terms, that ends the matter; and if not, it certainly ends it. He measures out his plans weeks ahead, by the half hour, never failing in his engagements, and never forgiving the laggard who keeps him waiting. His cattle business enlarged enormously, until he purchased and sold many thousands a year. All the money not needed in his business was invested in lands, and it is said he has never been known to sell an acre. His home farm contains ten thousand acres, and a gentleman told me that one field on that farm, planted year after year with corn, contains three thousand acres, and another four thousand. And besides these, many smaller ones of a section, less or more. His landed estate is said to be worth a million of dollars.

His mode of dealing with tenants is characteristic. He assigns them certain tracts, and tells them he wants them to put in so many acres of corn, agreeing, if they work well, to pay them so much a bushel for the crop when ripe. In the fall he brings each man his money, and then drives to each man a certain number of cattle and hogs, and says: "I will pay you so much a head to feed these, this winter, all they can eat, and you are to have them at my house on the 1st day of next May." On the specified day his droves are coming in from all directions, and buyers from the Eastern cities are there attending the greatest cattle market of the West, if not in America. The beef cattle on the grounds amount to thousands, and the drovers are able to get just what they want. And what is singular, this man never keeps book accounts, retaining the minutest details of his immense business in his memory, and filling up his engagements with perfect exactness.

A few years since such protracted tasking of mind and body broke him down, and I am told that he is showing too many signs of age for a man said to be not over 60. In some respects he is the most remarkable man in all Illinois, the like of whom will not soon be seen again. His name is Jacob Strawn.

Blanketing Cows.

A correspondent of the *Rural Intelligencer* has been travelling through Holland, and says:

Great care is taken of their cows, both in the winter and in the summer; and in a lowery wet day, you will see the cows in the field covered with blankets; aye, even more commonly than a horse is blanketed here in the winter. This care is well repaid by a greater flow of milk and a less consumption of forage.

Judging Animals.

The difficulties which are often experienced by the most competent judges, in deciding between two really first-rate animals of a first-rate sort, are greater than the majority of people who never acted in the capacity of judge have any idea of. I am happy to say that at the meetings of the Royal Society such cases frequently do occur, and, I hope, always will, and with the wish that what I here suggest may tend to assist judges in their laborious duties, I am induced to trouble you with these remarks.

I will take an instance of two first-rate Short-horn bulls, neither of them having a faulty point. Judge A. says, "What a superb back No. 1 has!" B. says, "But look at that depth of carcass in No. 2." "But the length of quarter in No. 1!" continues A.; and in return B. draws attention to the silky texture of the skin of No. 2. The question is here put to Judge C., who *should* decide the case; but he has to balance, in *his* mind, whether a superior back is more to be considered than an extraordinary depth of carcass; and again, is a first-rate quality of hide equivalent to an unusual length of quarter? And thus points, without having some definite value attached to them, might be compared one against another *ad infinitum*, without ever coming to a satisfactory conclusion.

Now, what I wish to see is, a definite value affixed to every point in the perfect animal, and when such cases of nicety as I allude to do occur, let the judges take point by point, and compare value in numbers, and then the animal commanding the highest amount would be the one selected. If the perfect animal were 50, the component parts might be something as follows:

General appearance,	8	12	10
Back, (length and width,)	8	10	8
Chest,,	6	4	5
Width of hips and loin,	5	4	5
Depth, (rotundity of carcass,)	5	4	5
Quarters,	5	3	3
Head,	4	4	9
Hide, (or wool,)	4	5	2
Bone,	3	2	2
Shortness of legs,	2	1	2
	50	50	50

This table is merely on a rough scale; but, I think, if the Royal Society would devote one of their meetings to the consideration of the subject, their time would not be wasted; and a scale made under their direction, similar to the above, would be received by the agricultural public as an authentic data to refer to.—*Mark-Lane Express.*

The Largest Nursery in the World.

It has been some years since Rochester has become the head quarters for nurseries in America. From only a few acres in extent, as they existed fifteen or twenty years since, the nurseries within ten miles of the city now cover at least one thousand densely planted acres.

The cost and annual product of these nurseries may be reckoned with some degree of accuracy, by taking as the basis of calculation the estimates of several intelligent nurserymen of that place,—that a *well managed* acre would yield as an annual average from two to three hundred dollars—the expenses varying from fifty to seventy-five per cent. of this amount. It would of course be greatly controlled by the kind of trees raised, the proportion of ornamentals, &c., but still more by the judgment, energy, and skill exercised by the manager,—for under the direction of some, the cost exceeds the profits, and the business consequently soon comes to an end.

But it is not our present object to pursue this inquiry, but to give to our readers the results of a few hours personal observation of one of the establishments to which we have alluded,—namely, that of Ellwanger and Barry, who now have about *two hundred and seventy-five acres* actually occupied with their nurseries. These are not all in one contiguous piece of ground, but are comprised in four principal detached portions, of fifty to a hundred acres each, lying near each other. For extent and perfection combined, there is none in America that nearly approaches this establishment, and we have not been able to ascertain from satisfactory sources, that there is any in Europe—although there may possibly be a greater number of hands employed in some European nurseries, where labor is cheap and economy not studied.

Ellwanger & Barry had in regular employ at the time of our visit over one hundred hands. In the spring they have two or three hundred. Being in the midst of the budding season, they have sixteen active budders at work, with boys to tie after them, and other hands to precede them in preparing the stocks. These, added to such as were occupied in providing the buds, and in removing the ligatures, amounted to about *sixty* in all, connected with this department of operations. The buds are all cut by the proprietors themselves, and every pains taken to secure the greatest accuracy throughout this mammoth establishment—about twenty-five thousand buds are inserted daily; and eight persons are required in connection with the persons who cut the buds, to remove the leaves from them on the spot.

They employ twenty-five horses. During all the early part of the season, these were all required in cultivating the rows—at present only eighteen are needed for this purpose.

We observed *single fields*, of thirty or forty acres each, out of the many which constituted their establishment, which alone would be regarded as large for an entire nursery. A block of ninety thousand (90,000) cherry trees, one year from the bud, was especially noticed for its beautiful growth, most of the trees being already about five feet high, and as even along the tops as if they had been sheared. A half acre of seedling pears had as fine a growth as any we have ever seen, although they numbered at least one million. They must be worth, at market prices, more than ten thousand dollars. Two hundred thousand were picked out from them early in summer without any sensible diminution of their numbers. As nearly as we could estimate, there were at least two hundred thousand *Norway firs* two feet or more in height, and covering many acres.

Their ornamental department is on a very large scale. They have five hundred feet in length of glass propagating houses—seven acres in roses—and about half an acre densely planted with dahlias. They have a very rare collection of the celebrated new Californian tree, the *Wellingtonia gigantea*, being no less than five thousand fine young plants of this tree, grown from seed collected in California, and which were procured by gathering such as the squirrels had thrown down in their depredations. A year ago, these plants sold for a guinea each—at only one dollar now, here was a space twenty feet square worth a valuable farm.

In their grape house, they have over ten thousand exotic grapes of fine growth for sale. Their collection of bearing specimen pear trees is unequalled in this country—they have five to six thousand, most of which are handsomely trained pyramids, comprising about four hundred sorts.

In such an immense establishment, our readers will naturally suppose there must be a great deal of confusion and much bad growth and bad cultivation. But the reverse is true in a striking degree. An excellent system appears to pervade the whole; and as many have remarked, they are remarkably successful in all they undertake, from the most

delicate hot-house plants to their vast plantations of large and thrifty fruit trees. Indeed there seems to be a sort of magic in all their attempts at propagation, so rarely are there any failures.

The reason of this remarkable success is their thorough experience and knowledge of the requisites for every operation, and an excellent soil, reduced to the best condition by subsoiling and constant tillage. A weed is a great rarity on their grounds.

The cost of conducting this establishment must of course be very great—although we have no definite information on he subject, we should judge from the estimates mentioned in the early part of this article, that they must amount to fifty thousand dollars annually. Their sales may be estimated from the same data, remembering that none are more successful, and that probably no nursery is better managed for pecuniary success.

There are several other nurseries at Rochester, of large size, which we were unable to visit—among which those of H. E. HOOKER & Co., FROST & Co., and S. MOULSON, are widely celebrated, each containing, as we have been informed, a hundred acres or more.

Since writing the foregoing, Ellwanger & Barry have, at our request, furnished the following statement of the number of acres occupied by each crop on their grounds.

ORNAMENTAL DEPARTMENT, 52 acres, viz:		
Evergreens,	20 acres.	
Roses,	7 "	
Flowering shrubs,	6 "	
Magnolia seedlings in seed bed, thick,	1½ "	
Miscellaneous trees, specimens, &c.,	17½	52
FRUIT DEPARTMENT, 225 acres, viz:		
Standard apples,	37 acres.	
Dwarf do	11 "	
Pears,	64 "	
Cherries,	26 "	
Plums,	12 "	
Peaches,	18 "	
Apricots,	3 "	
Apple quinces,	4 "	
Currants,	4 "	
Gooseberries 4, grapes 4,	8 "	
Pear seedlings,	2 "	
Sundries—seedlings, rhubarb, asparagus, raspberries, strawberries, quince stocks, &c., &c.,	35	225
		277

—*Country Gentleman.*

Patent Stump Puller.

Among the visits made by us during the present month to the homes of the farmers in various parts of this State and New Hampshire was one to Orange, Mass., to witness the operations of the eighth wonder of the world the Patent Stump Puller, owned and operated by W. W. Willis, of that town. Notice of trial had been given, so that persons assembled from adjoining towns and a few had come from remote distances.

At ten o clock the hook of a stout chain was placed under the root of a moderately sized stump, and it was turned out with as much apparent ease as though it had been a mere log with no attachments to the ground. Other stumps of still larger and more extensive roots were then taken out, and all with certainty, and without the slightest confusion—the time occupied in removing each one after the chain was applied, not exceeding ten minutes.

At length the visitors having multiplied to quite a crowd, a larger chain was attached, an enormous stump, the growth perhaps of centuries, was selected. With a small, half circular spade, room was made under one of the roots, and a stout hook attached. Nearly the whole surface of the ground about the stump was covered with stumps of a latter growth of young pines, whose roots penetrated the soil and mingled with those of their ancient progenitor. The stump itself was between two and three feet in diameter, as were its roots.

A pair of stout oxen were then hitched to the lever, and driven forward. When they had advanced some three or four rods, the chain was taken up, and they were turned back without unhitching, the roots in the machine cracking and making a noise like a pistol exploded under water. The ground gradually arose about the stump, and in five minutes its gnarly root's which had securely lain there for ages, were brought to light. At the expiration of *ten minutes* the old hero was fairly turned over, and the roots on the upper side pointed to heaven! Upon actual measurement, we found the roots extending something more than 16 feet from each side of the stump.

A gentleman from Valparaiso who accompanied us, and who is intrusted by the Chilian Government with funds to purchase agricultural implements, after witnessing the exhibition, at once ordered three of the machines to be sent to his country.

The experiment was one of the most astonishing exhibitions of mechanical power that we have ever witnesed. The machine is exceedingly simple, and not liable to get out of repair.—*N. E. Farmer.*

Missouri Challenging the Union.

In a Missouri periodical, the *Valley Farmer*, appears the following challenge from the proprietors of the Sigerson Farm, near St. Louis:—

MISSOURI CHALLENGES THE UNITED STATES!—The undersigned, believing that their farm, situated seven miles south of St Louis, Mo., is unequalled in point of variety, production and extent, by any other in the United States, (though it has been in cultivation less than ten years,) challenge the whole Union, to a competition for a grand sweepstake premium on the following conditions:

Each person competing shall deposit five hundred dollars, to be used as hereafter specified.

Entries of farms to be made prior to September 1, 1855.

A committee to consist of one person from each State in which any farm or farms shall be entered, shall be selected by the Governor of the respective States represented, whose duty, when so selected and notified by the Governor, shall be, to proceed and visit each farm so entered, during the months of September and October, and award the premium to the owner of the farm which shall excel in these particulars, viz:

Variety of production.

Amount of productions, and

Extent of surface cultivated.

The premium shall consist of a service of plate to be purchased with the money deposited by all the competitors, after the expenses of the committee have been paid.

We are anxious to let the world know what has been and what can be done west of the Mississippi river, and make this offer in good faith, and with a full determination to carry it out.

All necessary preliminary arrangements will be made in a liberal manner. Who will enter the list?

Communications with reference to the above, may be made directly to us at St. Louis, or to E. Abbott, Esq., editor of the *Valley Farmer*, St. Louis, Mo.

Pledging ourselves that all such shall meet with prompt and respectful attention. Very respectfully,

JOHN SIGERSON & BROTHER.

St. Louis, Mo., June 1, 1855.

That those who think of engaging in this competition may know what they have to contend with, we copy from the St. Louis *Democrat* of the 13th inst., the following account

of the Sigerson farm by a correspondent of that journal:

Statistics will better show its proportions than elaborate descriptions of scenery. 400 acres of pasture, grove and lawn—150 acres of meadow, 86 of wheat, 65 of oats and rye, corn and potatoes enough to supply the numerous family and stock—nine miles of Osage Orange hedge, well trimmed, and much of it large enough to turn cattle, adds greatly to the picturesque beauty of the rolling prairie; enclosing pastures, orchards, nurseries, flower-gardens, and fields—verdant net-work binding all together, protecting and ornamenting at the same time. There are two hundred acres of orchard just coming into vigorous usefulness—eight thousand peach and apricot trees, and, from present appearances, some of them will give many a rich treat ere the wintry winds sweep over us again. Pear, apple, plum and cherry, bear swift witness of the "good time coming."

Twenty-five acres of strawberries have already given our St. Louisans a foretaste of the future, and dozens of men are now engaged replacing the old beds, and enlarging them by the acre. Three hundred thousand grape-cuttings have been set out this spring, and most of them are doing well—forty thousand evergreens in fine and fresh condition—two hundred and ten thousand quince trees are ready for the budding of pears—twenty bushels of peach stones and seven bushels of apple seeds have this season been planted, and acres are covered with the uprising life. A great variety of forest trees are cultivated for the market, and it would be easier, perhaps, to tell what the Messrs. Sigersons have not, that is indigenous to this climate, than to enumerate what they have.

The substantial stone farm house is surrounded by a large door-yard, which is reached from the stone road by a serpentine road through a wooden lawn. A semi-circle avenue bordered by cedars, snow-balls and lilacs, leads to the door, where kind hospitality and a farmer's welcome meet the numerous visitants that through the summer months throng the place to breathe the fragrant air, and luxuriate for a brief hour in the beauty and flowers. Parterres of choice flowers, nurseries of roses blossom in the sun by the half acre. Borders, walks, summer-houses, arbors, vines on every hand in magnitude of magnificence that keep you all the while in wonder and admiration, and form a whole that must be seen to be appreciated, and has seldom if ever been surpassed. The whole stock of trees, shrubs, vines and evergreens, number two millions, (Mr. Sigerson says it is nearer three millions, but he puts it down two millions, lest the incredulous should be frightened at its vastness of number, and set the whole down as a fable.)

We spent two and a half hours riding through the grounds, and examining the fields, pastures, orchards, lawns, meadows garden, shrubbery—looked down into the wells, examined the spring, the stone quarry, saw the fine Durhams, the good horses, listened and laughed at the proud, gutteral crow of Monsieur Shanghai, heard Madame Poland cackle—and returned convinced that we have not seen all, and that no one can truly realize the extent of the farm, or its high state of culture, and the labor and expenses necessary to keep it in progress, that has not taken a ride through its shady drives, its bordered avenues and hedge lanes.

A Fact in Regard to Drilling Wheat.

We wish to record a fact which seems rather remarkable in regard to drilling in wheat. We sowed about nine acres last fall with one of Ross' Drills, and some three acres among corn, with a three shovel cultivator. Of the former, we have not noticed a single plant heaved out with the frost during the winter, though a part of it was sown on the poorest clay land on the farm, with but one plowing. It was sown immediately before that among the corn, and presented in the early winter a decidedly poor prospect. But that sown among corn is badly killed with winter, many plants lying on the top of the ground, dead. In some places, it seems almost entirely ruined. It is the same kind of wheat as that which was drilled. Our readers may draw their own conclusions.—*Indiana Farmer.*

Timothy.

Have you not, Messrs. Editors, inquired oftener than you can tell the origin of the name of the grass called Timothy? I have. Have not yet oftener heard the question asked without any answer being given? I found the following in a little beautiful, interesting and useful book entitled The Green Fields and their Grasses, by Anne Pratt, London.

"There are several species, two of the cats-tail grass. One only is very common, but that one is to be found in every meadow. It is the common cats-tail or Timothy grass (*Phleum pratense*). This latter name it received from Timothy Hanson, who introduced it from New-York and Carolina, about the year 1780." A SUBSCRIBER.—*Country Gentleman.*

Quince Trees.

There is probably not a single *Quince Orchard* in Pennsylvania. We have never chanced to see in any part of the State quince trees, excepting in some obscure corner of the field or garden, entirely neglected, never pruned, manured or cultivated. A stranger aware of the fact that good quinces always sell readily in Philadelphia market, and at a comparatively higher price than other fruit, knowing also that hundreds of barrels, perhaps thousands, are brought here for sale in the fall of the year from north and east of us, would suppose our soil not adapted to quince culture. This is not the case. There is no fruit which, in Pennsylvania, would pay better than the quince, if properly cultivated. They produce abundantly, come into profit in about three years after planting, are hardy, require but little attention, can be placed closer together than most other fruit trees, the fruit is more easily picked, and will better bear transportation. An idea is very prevalent that they do better on low moist ground. This is a mistake, originating from the fact that they will thrive in such situations when other trees will not. The quince will do as well on high dry ground as the pear tree. To do it justice, it should receive every fall a good coat of barnyard manure well dug in, the bark should be cleansed occasionally with the lye mixture, as recommended for other fruit trees, and attention should be given to pruning all decayed wood or crowded branches, so as to give free access to the sun and air, and make a good symmetrical head.

One of the best manures for the quince tree is salt, which should be strewn over the ground every spring in the proportion of two or three quarts to each tree. This has been fully tried, and found to increase the luxuriance of the foliage and quality of the fruit. It is the *special manure* for this tree, and should never be omitted. The quince may be planted in rows ten feet apart, which will give four hundred trees to the acre. Two bushels to the tree, and $1,50 per bushel, which is a low estimate, will make a return of over $1200 to the acre.

The orange or apple quince is the most profitable variety.

GAS FOR COUNTRY RFSIDENCES.

The great convenience, and, under many circumstances, *economy*, as well as *safety*, of introducing gas light into country residences, have induced us to insert the accompanying cuts, to illustrate some gas fixtures manufactured in this city, which several of our friends in the country have had erected on their farms, and which operate to entire satisfaction. They are made of two sizes, the large one being set up for $650, and the other for $350, exclusive of gas pipes and burners. The gas is manufactured from resin, one pound of resin making nine cubic feet of gas. The works are capable of making one hundred cubic feet of gas per hour. One and a half bushels of anthracite coal will produce heat enough to make eight hundred cubic feet of gas, and one of our friends, who has the apparatus on his place, estimates the cost at $2,37 per one thousand feet.

Two medals have been awarded to the inventor by the Franklin Institute of Philadelphia.

Fig. 1.—A represents the sides of the stove; B the ends; C gates in the ends. G is an additional section placed under the resin holder, H, where the resin is melted; I is a stop-cock; N, movable heads screwed to the retort by bolts; T, the cooler, supplied with water covering the outlet pipe, through which the gas passes down to the condenser.

Fig. 1.

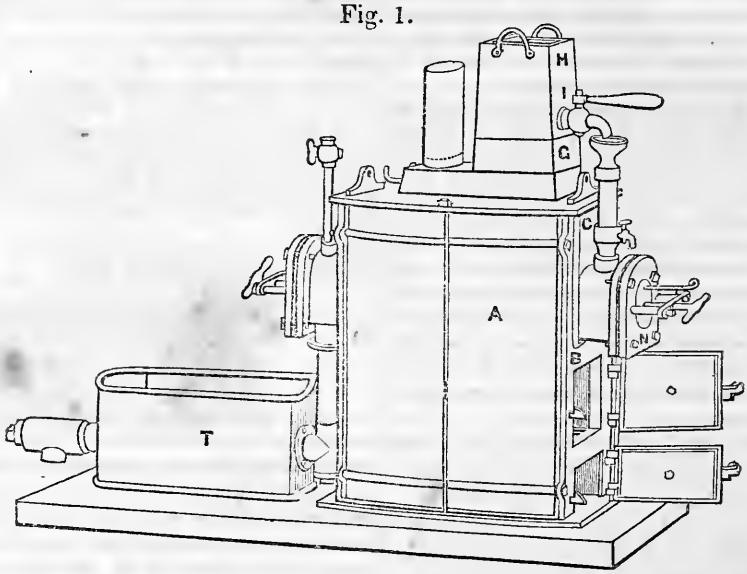


Fig. 2.

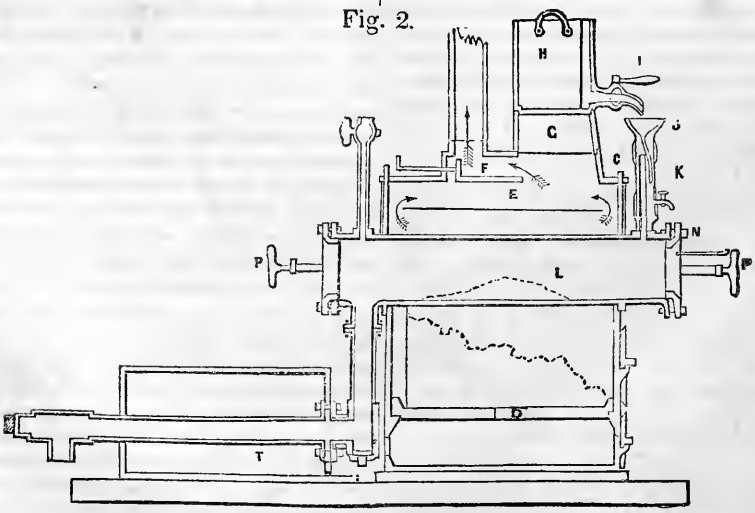


Fig. 2.—C represents gates in the ends; D, the grate bars; E, a plate near the top of the stove, to spread the heat to the ends of the retort; F, a sliding damper, by which the heat may be thrown directly under the resin holder or up the chimney; J is a funnel and descending tube; K, an ascending tube, rising from the front end of the retort and extending an inch or two above the lower end of J; L, a retort of a form, with the arch springing high from its sides, the bottom flat; P P, clamps securing the ground heads of the retort. The rough lines under the retort represent the fuel; the lines in the retort represent the coke charging, the plug at the end of

the outlet pipe can be removed, and an iron rod inserted to remove obstructions. The stop-cock immediately over the outlet pipe is used to flow off gas when it is made too rapidly.

For the Farm Journal.

Agricultural Botany.

BY HARLAND COULTAS, PROFESSOR OF BOTANY IN THE "WAGNER FREE INSTITUTE OF SCIENCE."

NO. 2.

Before we proceed with our exposition of the anatomy and functions of plants, it is proper carefully to examine that peculiar investment which covers them, termed by physiologists

THE EPIDERMIS.—Every part of a plant as well as of an animal, with the exception of the stigma or top of the pistil and the extremities of the roots, is covered by this thin membrenaceous integument. It usually consists of two parts: 1st, an outward pellicle without appreciable organization, called the cuticle; 2d, one or more strata of flattened tabular cells, which are much larger than the cells of the subjacent tissue, constituting the true epidermis or skin. These two superposed membranes are intimately united and pierced by a number of apertures termed stomata or pores. The epidermis of plants is without chlorophyl, and may be readily detached from the subjacent tissues in the form of a thin transparent layer.

If the leaves of the cabbage, iris, or lily, be macerated in water for a few days, there may be separated from them a thin, continuous, and non-cellular membrane. This is the cuticle. All the points of this membrane which correspond to the pores are pierced with openings n the form of button holes. When the subjacent epidermis has hairs on its surface, these are also covered with the cuticle, which, when it is detached from the epidermis, presents on its surface prolongations having the form of these hairs.

Fig. 1. Pellicle of cabbage, detached by maceration, covering the hairs *h*, and having openings *s* corresponding to the stomata.

The existence of the cuticle on the epidermis of plants in the form of a perfectly distinct membrane, was first announced to the world by Benedict de Saussure in 1762; since that period it has been proved true by Hedwig in 1793, and by M. Adolphus Brongniart in 1834, who called the attention of anatomists to this point in his beautiful memoir on the structure of leaves.

The cuticle is the only part of the epidermis covering the surface of aquatic plants which remain constantly plunged in the water. Few persons are aware that aquatic plants are clothed in water-proof garments. The cuticle is developed on them in the form of a glaucous bloom or vegetable wax, which renders their exterior surface a perfect water-shed, thus preventing them from obtaining an injurious amount of the fluid in which they float. If the reader attempts to wet the leaves of the (*Nuphar advena*) or common spatterdock of the pools, he will see the water roll off like quicksilver globules from a plate of glass.

The epidermis may be readily perceived to be a membrane perfectly distinct from the cellular and fibrous tissue which it covers, with which it contracts but a feeble adhesion, and from which it is easily separated in the form of a colorless transparent layer. The epidermis of plants is clearly intended to guard their subjacent vascular and cellular systems from injury, and to control the evaporation of their fluids within due bounds.

In the lily and balsam, which allow of ready evaporation, the epidermis consists of a single layer of cells; but in plants which inhabit dry situations, it is so constructed as to retard evaporation, and either consists of several layers of cells, as in the oleander, or else is of considerable thickness, as in the aloe and cactus. By this provision, these plants are enabled to retain their moisture for a greater length of time.

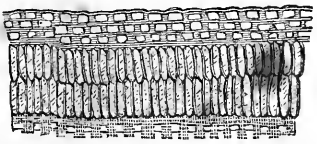


Fig. 2. Magnified perpendicular section of the leaf of the oleander, showing the thickness of the epidermis, which is composed of three layers of cells, and the compact vertical cells of the upper stratum of parenchyma, or green cellular tissue of the leaf.

It must be evident that the exhalation of water from the leaves is to a certain extent necessary, as it is the only means by which the sap can be concentrated and rendered subservient to the nutrition of the plant. Now so long as the roots can absorb as much water as the leaves evaporate, the plant will appear fresh and green, but the foliage droops (as is often seen on a hot summer's day towards noon,) when the evaporation from the leaves exceeds the supply at the roots. A copious supply of water, however, usually accumulates on the leaves during the cloudless nights of summer, which is absorbed through the pores on their surface into their organism, and in the morning the plants refreshed by the night dews, have assumed their wonted rapidity and freshness. In this case the only absorbents are the stomata on the epidermis. How beautiful this provision of nature, which, at the time that the soil is dried to dust, causes the moisture to distil from the atmosphere on every forest leaf and blade of grass in gently descending dews, to remedy as it were in some measure the evils arising from an insufficiency of water in the soil.

The stomata or pores of plants vary in their figure and size. They are, however, usually of an oval figure with a slit in the middle, and are so situated as to open directly into the intercellular spaces of the parenchyma. These pores may be called the vegetable governor. They regulate and control the evaporation from the surface of plants, thus promoting a healthy passage of the fluids through the system.

This is done on the following principle. The slit or perforation in the epidermal surface lies between two cells, which differ from each other in being very hygometrical, or easily affected by the moisture of the atmosphere. When the air is damp, and there is an abundance of moisture in the ground, these two cells become swollen and turgid, and by their outward curvature open the pore and allow the escape of the superfluous water; but when the atmosphere is dry they straighten and lie parallel, their sides being brought into close contact. The pore is thus closed, and the evaporation stopped the moment it becomes injurious to the plant.

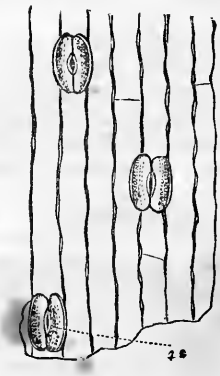


Fig. 3. Epidermis of the white lily, showing the stomata *st*, composed of two cells, with an opening or slit between them.

The structure of the stomata or pores of plants may be readily perceived on the epidermis of the lily, where they are unusually large. The epidermis must be first carefully removed from one of the leaves, and having been freed from all its chlorophyl, or green matter, it must be placed between two slips of glass, with a drop of water between them, so as to give it the necessary degree of transparency. Water ought always for this reason to be used, whenever objects selected from the tissues of plants are examined microscopically. The epidermis, thus prepared, will exhibit these pores, and the nature and beauty of their mechanism will be seen and appreciated.

Stomata are generally found on the under surface of the leaves, the mechanism being too delicate to act well in the direct sunshine. They are invariably absent from the parts of plants growing beneath the water. The water lilies and all plants with floating leaves have the stomata on their upper surface.

Stomata are more or less abundant on the cuticle of all plants, and as plants perspire through these apertures in proportion to their number on different plants, is it necessary to supply them with water. The plant called *Hydrangea guercifolia* has on one square inch of its surface 160,000 pores, and therefore requires a greater supply of water than plants possessed of from 70 to 100 pores on the same superfices. The rapidity with which plants wither and dry when not watered, is exactly in proportion to the number of their exhaling pores.

It must be evident to all practical men, from these facts, that it is of some importance to keep the leaves of plants free from all impurities, which are apt to accumulate on their surface and thus choke up their porous openings. During dry seasons a supply of water to the leaves is of as much importance as a moistened soil. House plants frequently suffer from the dust with which their leaves become covered. Their health and general appearance may be very much improved by a careful cleansing of their leaves every other day with a wet sponge. It is as important to keep the epidermis of a plant in a cleanly state as the skin of an animal. Neglect in either instance brings on disease, premature decay, and loss of vitality.

United States Agricultural Society's Exhibition.

We have received the following communication from the Secretary of the United States Agricultural Society at Boston, which speaks for itself. The style and completeness with which in those diggings they *go through* with any thing they undertake, is a caution as well as an example to the rest of the country. Is this to be wondered at when they have a "*King*" there to facilitate the arrangements, who is not only fond of such sport himself, but, if necessary, can be backed up by one still "*Wilder*," and who is favorably known over the length and breadth of the land? Can a plain republican manager be expected to equal a *King?* We can hardly indulge the expectation of occupying one of the seats provided for the five thousand spectators, although there will be many things there we should like to see and hear. We wish our friends there the best success.

Secretary's Office, U. S. Agricultural Society,
Boston, September 10th, 1855.

MR. EDITOR:—Dear Sir:—Your note of enquiry as to the Show of the United States Agricultural Society, to be holden in Boston on the 23d, 24th, 25th and 26th days of October next, was duly received; and of such arrangements as are already made or decided upon, I hasten to advise you.

The show grounds are situated in the limits of Boston within reasonable walking distance of any part of the city, but ample facilities will be provided for those who prefer (and who does not?) to ride. A fine public square, generously granted by the corporation for the purposes of the exhibition, has been graded to a perfect level, and will be enclosed by a tight board fence ten feet high. Within this enclosure a one-half mile track for the trial of horses will be carefully prepared; its curves are such as one engineer assures us that a locomotive can describe them at the top of speed, consequently locomotive quadrupeds can with ease put out their full powers without "*breaking up*," as on many courses too often happens, to the damage of the horse's reputation for speed, the annoyance of drivers, and the disappointment of "the crowd."

On the north, east and south sides of the grounds, adjoining the fence, will be erected stables for the stock extending over three thousand feet, with inner lines of stalls at either end of the track.

In the accommodations for animals, we have adopted many of the best features of English shows, which I, at least, have not seen copied in this country. The effect to the observer will be fine; and the occupants in no whit lose by the change.

The Cochituate water, of which Bostonians boast, will be introduced and plentifully distributed through every part of the enclosure, for the greater convenience of exhibitors and exhibited.

Seats for five thousand spectators will be built on the west side of the track, on the home stretch, so that occupants may oversee the two most important parts of the "trial of speed," viz: the start and the coming in; while their elevation will enable them to witness all the exciting and tantalizing occurrences incident to a trot—the baulk—the break—the widening gap—the favorite's nose nearing the distance post when his competitor's tail has passed the goal. This improvement has, I am pleased to see, been adopted at most of our large shows.

All the buildings upon the grounds will be erected under the superintendence of Mr. John R. Hall, Architect to the Society, whose professional taste and skill have secured to him an enviable reputation. These erections are beautifully designed, and with a proper distribution of the large and the smaller tents over the vast area, cannot fail to produce a fine effect.

"An ounce of prevention is worth a pound of cure," and we shall accordingly take every precaution against the occurrence of accidents; but as "accidents will happen in the best regulated families," our old friend Dr. Geo. H. Dadd, who is our veterinary surgeon, will be in constant attendance to render his professional services in cases of need.

Of course no one can now speak with certainty as to the number or character of the entries which will be made, but we shall be sadly disappointed, if in quality, as well as in quantity of stock, it does not excel all our previous exhibitions; and as you know, we had no reason to be ashamed of either one of them. We calculate with considerable confidence on entries from your State, as well as from many others. But do not judge of our Massachusetts animals by the Durham bull show at Springfield, Ohio, which was finally won in a raffle for eighteen cents.

If your breeders conclude to come on, do not allow them to draw on us *before they leave home* for their premiums as being *a sure thing!*

The horse department will be very certain to delight every lover of that noble quadruped. Already we have been advised of the intended exhibition of some of the finest imported animals in the country, and our horses of home manufacture will be in mass convention you may rely on it. The first trotters in America will try their speed on this national course for the championship, and the most famous stallions will be here to uphold their reputation. Come and see them, and bring all your friends.

The show of sheep and swine will undoubtedly be great and excellent, for their home is but a few hours ride hence. Our premium list has been sent to you, by which you see that we offer in the aggregate about ten thousand dollars. Our expenses may be estimated at near ten thousand dollars more. Our admission fee is but twenty-five cents, so please give us your good wishes for one hundred thousand visitors; we hope for more.

On the afternoon of Friday, the last day of the show, a Grand Agricultural Banquet will be held beneath a large tent on the grounds. Seats for three thousand persons will be provided; and when you know that our excellent President, Marshall P. Wilder, will preside, and that Everett, Choate, Winthrop, with other eminent men from other States, are expected to address the assemblage, you will with reason anticipate an unusual treat for the physical and the mental man.

I am on the point of departure for the Vermont and New Hampshire State Shows, which are held respectively at Rutland and Manchester; this fact will account for the insufficiency of my reply to your queries, and for the haste with which I subscribe myself. Yours truly,

WILLIAM S. KING.

To Editor of Penna. Farm Journal.

Raspberry Culture.

We have long endeavored to urge upon the agricultural portion of our readers the profits of fruit culture, and especially the smaller fruits in the vicinity of Philadelphia. Strawberries, raspberries, blackberries, currants, and gooseberries, are not found in this market at all equal to the demand, and those consequently who have gone into their culture, and abandoned the *stereotyped rotation* of corn, oats and wheat, are reaping a very handsome remuneration. The following article from a Poughkeepsie (New York) paper will give some idea of the style in which the raspberry business is carried on in that section. The variety cultivated there is the True Red or English Antwerp. This is much superior in size and quality to the common Red Antwerp, but needs protection in the winter, which is given by simply bending down the canes and covering with a few inches of earth.

For profit, we would prefer twenty acres of suitable land, well located in respect to access to market, within fifteen miles of Philadelphia, and devoted to fruit and vegetable culture, to any one hundred acres within the same distance, and farmed under the ordinary system. The article says:

There are now about one hundred acres of raspberries in bearing in the immediate vicinity of Milton, and immense quantities of plants are being set out every year.

A few days ago we visited the raspberry plantation of Nathaniel Hallock, at Milton, in order to learn the *modus operandi* of the culture. Mr. Hallock's being one of the principal plantations.

The pickers were in the fields with their baskets between eight and nine o'clock in the morning, as soon as the dew was off the plants, as the berries do not keep so well when picked wet.

In a short time the pickers began to bring in the baskets of berries. These baskets hold about a pint, and are very neat looking, being made of willow, and much superior to the baskets in which strawberries are sold, in fact the berries would hardly sell if sent to New-York in strawberry baskets.

There were about fifty pickers at work—men, women and children—the women being the most expert pickers, of course.

One person was employed constantly, and a part of the time several persons, packing the baskets. The baskets, as soon as picked and examined, are packed into boxes of different sizes, according to the crop of that

day. The object of putting them into boxes is to insure their safe transit to the market, and in order to do this the packer has to work carefully to fit the baskets in so that each one braces the other; when the boxes are filled to the top, the lid is closed and locked, and the boxes are ready for shipment.

The season lasts about six weeks, and this period is one continual round of business; the berries being sent off to New-York every night except Saturday, (there being no sale for them on Sunday.)

The berries were all picked about six o'clock, and after supper they were conveyed to the landing, the baskets making two very heavy two horse loads, and as we could calculate the steamboat took off about 60,000 baskets that night, making about twenty tons of berries, exclusive of the weight of boxes and baskets.

The baskets are imported from France by hundreds of thousands every year, and although such quantities are manufactured every year, the supply is inadequate to the demand, the latter exceeding the former by about one-half.

The culture of the plants requires the services of a large number of people.

The pickers constitute a small army, there being from five to ten, and often more, required for each acre, according to the time in the season, which was at its height this year about the second week in July.

The manufacture of the boxes in which the baskets of berries are packed is no small item, and the steamboats that carry this extra freight are obliged to employ extra men to handle it.

This business, though at first view it seems small, gives employment to, and distributes its gains among, thousands of people.

From the Milton landing, the average daily export is 10,000 baskets, and the retail price in New-York, averages about ten cents per basket, thus the product of 100 acres amount to $1,000 per day, or $42,000 per season. We can call to mind no other crop which produces as much per acre, or which gives employment to so many.

Can Manure be Removed by the Tenant?

This question, which often has given rise to difficulty between landlord and tenant, has been finally disposed of by a decision of the Supreme Court of Pennsylvania, delivered by Chief Justice Lewis. While the views entertained by the learned Judge will be recognised every where as *just and right*, it is also gratifying to find they are sustained by *law—justice* and *law* in these fast times not being always synonymous terms.

As the whole opinion, and the legal authorities cited, would occupy rather much space, we quote below the substance of his argument. It was the case of Lewis, landlord, against Jones, tenant, to recover damages for carrying off a quantity of manure from a piece of land leased by Lewis to Jones. The principle that the manure belongs to the *land* of course applies equally in the case of a sale of property as of a lease:

The defendant kept cows: they were pastured on the place. There were a few acres for pasture and some for hay. It was testified by one witness that the defendant also purchased *some* hay. The defendant left the place on first of April, but in the latter end of March he removed the manure, which was in heaps in the barnyard. There were about thirty wagon loads.

James Orr, another witness, testified that Lewis bought *some* hay. Witness did not know how much. He purchased grain to feed his cows and horses. He had eight or nine horses. He fed the horses on grain that was bought. Another witness testified that he lived with Lewis in the fall of 1848. He testified that all of the hay and straw used were bought. The cows were dairy cows.

It is implied from the letting of a farm for agricultural purposes, that the tenant will cultivate the land according to the rules of good husbandry. This is as much a part of the contract as that he shall deliver up possession at the end of the term, or that he shall do no waste. If the manure which is made by the feeding and bedding of his stock on the premises, according to the usual course of husbandry, is to be disposed of and carried to another farm, it only creates necessity for the purchase of other fertilizing materials to keep the land in good order for the production of crops. This must be done at expense of money in the purchase, and time and labor in hauling it from a distance. If every tenant were to adopt the practice of selling the manure, much time and labor would be unnecessarily expended in transporting it from place to place; where, for all general purposes, the interests of landlord and tenant would be much better promoted by the application of the manure to the farm on which it was made. But a large proportion of farms are owned by widows and orphan children, and are necessarily in the occupancy of tenants from year to year. These, which should be under the peculiar protection of the law, would be most exposed to impoverishment. Tenants for short or uncertain periods, under the temptations of a rule of law which encourages bad husbandry, would be led into practices (each in self protection,) which no one would adopt with regard to his own land. Such a tenant would feel no interest whatever, in preserving the fertility of the soil for the benefit of those who might succeed him. He would be prompted by the incentive of interest to strip the land of every thing which the law permitted him to carry off. The practice would become general, and the result would be that all the farms in the commonwealth under cultivation by tenants for years would be impoverished; the tenants themselves receiving no adequate remuneration for their labor, the landlords no rent for their farms. It is manifest that such a course of husbandry would be injurious to the public interests and ruinous alike to landlords and tenants.

The doctrine that the manure goes with the land is of course confined to farms which are let for agricultural purposes; and the case before us is one of that character, in which the manure was made from the produce of the farm.

One of the witnesses, however, testified that the tenant "bought *some hay*—the witness did not know how much —"and *some grain* to feed his horses and cows. He fed the horses on the grain that was bought." Upon this evidence the court was requested to instruct the jury "that if the defendant spread upon the place, or left behind him, as much manure as the farm would reason-

ably produce itself, the excess belongs to him and not to the landlord."

This construction the court refuses to give, because there was no evidence of the facts thus supposed to exist. In this the court was perfectly right.

Nothing can more justly impair confidence in the administration of justice than the practice of encouraging or even permitting a jury to find facts of which there is no evidence. To ask a jury to separate the manure which was made on the premises, and to assign one portion to the tenant upon the ground that his horses and cows had "*some hay*," "*some grain*," not raised on the premises, without specifying how much of either, or showing how much of the grain, hay and straw, raised on the farm, had been supplied them for litter and food, would be asking a verdict without evidence. "Some" is a term too uncertain in its signification to sustain a verdict for any definite amount. It may mean a single ounce, or ten thousand tons—a single quart, or twenty thousand bushels.

But where a farm is let for agricultural purposes, the tenant cannot justify the removal of any portion of the manure made on the premises, by occasionally employing his teams in business not connected with the cultivation of the soil, and supplying them in part with hay and grain purchased from others, so long as the manure thus made is commingled with that from the produce of the farm. It is probable that in such a case the land would lose as much during the absence of the teams on the road as it would gain by the foreign admixture.

Be that as it may, it is certain that the tenant, by his own act, has rendered it impossible to ascertain the extent of his rights.

And the doctrine of *confusion* of goods properly applies to his claim. Popham's Rep. 38 Pl. 2.

"If A. will wilfully intermix his corn or hay with that of B., so that it becomes impossible to distinguish what belonged to A. from what belonged to B., *the whole belongs to* B.: 2 Kent's Com. 364.

It is ordered that the judgment of the court below be affirmed.

Judgment affirmed.

For the Farm Journal.

Committees at Exhibitions.

Mr. Editor:—This world of ours is one of strange inconsistencies. Twelve months ago, and indeed very recently, several of our papers (yours amongst the rest) contained communications reflecting severely upon the awards of Committeees in agricultural implements at the State Fair. The writers with commendable regard for the interests of all exhibitors, suggested the propriety of so dividing the duties of committees in this peculiar department as would enable them to give a full and impartial examination to every article, and report accordingly. This suggestion, which had every thing to recommend it to favor, was adopted by the Philadelphia Agricultural Society at its recent exhibition, and the reasonable hope was indulged that all the exhibitors would have an equal chance, and the awards of the committees be satisfactory. Alas, for the fallacy of human expectations! Like some of the aforesaid correspondents of the newspapers, I had made a tour of very close inspection amongst the implements before the committees acted, but especially those for which the regular premiums of the Society were offered. A friend well acquainted with agricultural implements and their practical uses, accompanied me. We took note of the particular merits of each, as displayed either in the quality and style of workmanship, or in its adaptation to the purposes for which it was intended. When the premiums were read off by the Secretary, we made it a point to be present, anticipating the best results from the adoption of the new system. Almost the very first award proved that the experiment was a failure, and many of the subsequent ones confirmed the impression. In a word, the same old tale was told. The farmer whose purchases of implements would be controlled by the awards of the committees, would scarcely succeed in getting *all* the most meritorious.

Now why is this? The committees had three days in which to make their examinations. Their duties were so divided that they could not, consistently urge the plea of having too much to do. Why then these singular awards? I have too much confidence in the integrity of the gentlemen who composed those committees, to suppose for a single instant that they would, in such a case as this, permit their prejudices to warp their judgment, or that their awards were not made in perfect good faith, and with a sincere desire to do justice to all exhibitors. Admitting this, there is but a single conclusion at which we can arrive, and that is, that the premiums awarded particular implements at agricultural exhibitions are, by no means, correct criterions of their value. In some cases, committees may pronounce correct judgment, but the experience of many years has clearly shown that they are as likely to be in the wrong as in the right. Such being the case, what is the value of the premiums. Positively nothing! Absolutely *worse* than nothing! for they frequently mislead and deceive the very persons for whose benefit the exhibitions are held—the farmers.

But the evil does not always end here. Exhibitors themselves are frequently misled by the awards of committees, and in one instance at least within my knowledge, an inventor and manufacturer, under the impression that the machine for which a committee awarded him a premium (in common with others intended for a similar purpose), was superior to all others, invested all his means in their manufacture, and I regret to say the investment has proved a perfect failure.

Since writing the above, I have had another opportunity of observing the action of committees on implements, but more particular of one committee whose duty it was to examine not merely a large number of implements and machines specified in the premium schedule, but also all new and valuable improvements in Drills, Reapers, Horse Powers, &c. This committee, unlike the generality of persons acting in their capacity, undertook to decide upon the merits of some twenty different Reapers and Mowers, a dozen horse powers and threshers, together with a very large number of drills and other complicated machines from a mere private examination of them, without a single word of explanation of their merits on the part of the inventors or exhibitors. As a result of the examinations of this sapient committee, it is due to them to state that they discovered merit enough in a very common looking ladies' work stand, made of rough wire, to award it a diploma, while such machines as Gibb's Grubbing Machine, Atkin's Automaton Self Reaper and Raker, Woodwards Smut Machines, a valuable improvement in grain dryers, together with a host of new and important inventions were passed without notice. As additional evidence of their superior powers of discrimination, they awarded a diploma for Scott's Little Giant Corn and Cob Mill, No. 2, (a most excellent article by the way) and another diploma for Scott's Little Giant, No. 3, although the one is an exact counterpart of the other, the only differ-

ence being that of a few inches in size. With such incontestible evidence of the value of *private* examinations, would it not be well for all State Societies to adopt the plan, making it obligatory upon the committees to ask no questions of exhibitors or inventors?

But seriously, are we accomplishing the object aimed at by our Agricultural Societies, in permitting the decisions of committees such as the one above alluded to, to be given to the world, and carrying with them the sanction of the Societies under whose auspices they act? How is it possible for any man or set of men to decide properly upon the merits of fifty different machines, more or less complicated, each one involving some new principle or combination of principles, unless they have a full and fair opportunity of testing their merits by actual practical experiment? Is it not supremely ridiculous to suppose that any thing like a correct conclusion can be arrived at from the trifling examination usually bestowed upon such machines? They may or may not award the premium to the best machine, but the chances are as many in favor of the worst as the best. Can purchasers rely upon these decisions? Assuredly not. What then is their value? Absolutely worse than nothing, for they are apt to deceive, and thus defeat the very object of the exhibition. What is the remedy? I know of no one completely effectual. Something would be gained by making practical experiment and operation on the ground a positive requirement, though this would not fully reach the object. Shall we not have this subject discussed, with the hope that something will be elicited which will correct our present very defective system of awards before another exhibition season arrives. Unless some change is made, I venture the prediction that in a very few years our agricultural exhibitions, at least so far as implements and machinery are concerned, will either become ridiculous farces, or be wholly abandoned. A SUB-COMMITTEE MAN.

Produce of one Cow.

AARON HANNUM, of Concord township, Delaware county, furnishes us with the following produce of one of his cows for two successive years:

1853–4, in 47 consecutive weeks, sold 115 lbs. of butter for	$57 94
Retained 105 lbs., which, at average price of the above,	28 29
Calf,	7 00
Pork,	7 00
Amount,	$100 23
1354–5, in 48 consecutive weeks, sold 240 lbs. of butter for	$68 82
Retained 76 lbs., which, at average price of the above,	21 79
Calf, one week old,	1 00
Pork,	7 00
Amount,	$98 61

Value of Subsoil.

L. DAMON, of West Chester, recently called our attention to the *productiveness* of what farmers generally consider barren and worthless subsoil, and which they dread so much to bring to the surface in their fields and gardens. In the recent erection of a foundry and machine shop on his property in the borough, he had occasion to take entirely away the surface soil to the depth of *two and a half feet*. Not supposing any thing could be made to grow and mature there, and merely wishing to obscure the yellow clay with any kind of green vegetation, he planted cabbages and beets, using a *very small* quantity of almost dry litter from the stable, which happened to be on hand.

To his surprise and that of his neighbors, they grew most luxuriantly, the cabbages measuring across their very hard and solid heads, without counting any outside leaves, fully fourteen inches, and the beets equally large in proportion. We have often heard of similar cases. The subsoil or substrata of our farms often consists of a very mine of wealth, abundance of the inorganic food of plants, the very material of growth and vigor, which they often stand *most* in need of. Still it is suffered to lie idle year after year. When will farmers awake to their true interests, and adopt the habit of *plowing deep*, thus renovating their worn out soils? It should be recollected that, in addition to the mineral constituents of this substratum, which are indispensable to the growth of plants, it has also for many years been receiving the washings of the rich surface soil, and thus contains in a greater or less degree nearly all the elements of fertility.

There can be no really good and profitable farming without a deep soil, and there cannot be a deep soil without deep plowing.

For the Farm Journal.

Sweet Scented Vernal Grass.

Those who sow grass seeds intended to produce permanent pasturage, should intermix some of the sweet scented vernal grass, which constitutes an essential part of all the best pasture grounds and meadows in England, Ireland, and other portions of Europe. It is naturalized in the neighborhood of Philadelphia, where it contributes that fine flavor to spring or May butter for which the city market is so famous. It gives the earliest bite in spring, whilst the aftermath affords excellent pasturage in autumn. Taken alone it is not recommended as a hay grass, although a mixture gives the hay that peculiarly agreeable flavor for which European hay is distinguished. The seed is very light, weighing only about five or six pounds to the bushel. E.

For the Farm Journal.

Renovation of Old Fruit Trees.

Passing a few days recently at the house of a friend in one of the Eastern States, my attention was drawn to a large pear tree, the body of which bore the appearance of great age, while the top was becoming renewed with young and healthy branches, and producing a variety of choice pears. I found my friend was in the practice of heading down his aged and decaying fruit trees, digging about, scraping and washing them, and then grafting with choice fruit the smaller branches or limbs, as also the new shoots, which would soon appear when the old and declining limbs were removed. This tree had been of little value, producing nothing but a small hard fruit which he called the button pear. His mother remembered it as an old tree sixty years before. The same friend informed me that a neighbor of his had six old trees bearing nothing but natural fruit, (choke pears,) almost worthless for man or beast. Five or six years since he headed them down and grafted them with the Bartlett pear. The present season he had taken thirty

bushels from the same trees, which he had sold at an average of more than three dollars a bushel. It may be best, in general, to supply the place of old trees with new, but old trees in this way are brought to bear much sooner than new; and when the body of an old tree is sound and healthy, there is no doubt but the top may be advantageously converted into a healthy, bearing condition.

West Chester, Pa.

For the Farm Journal.

Awards of Committees at Agricultural Exhibitions.

Mr. Editor:—Why is it that the awards of committees at our agricultural exhibitions are always delayed until the very last moment? One great object of such exhibitions is to enable farmers and others to learn which articles and stock are, in the estimation of the committees appointed to examine them, the best. This object is totally defeated by the arrangements now existing, and both exhibitors and visitors are losers by it. Would it not be well for committees in making their awards to have premium cards ready, and as soon as they have come to a determination in regard to the merits of any thing on exhibition to put that card on such article? My own impressions are that such a course would not only be more satisfactory to all parties, but decidedly more in accordance with the objects aimed at by the Societies. AMICUS.

For the Farm Journal.

A Hint or two for Breeders of Cattle.

Mr. Editor:—The exhibitions which have already taken place this fall, and which are yet to be held, will, it is hoped, exercise a beneficial influence upon the breeding of improved cattle in our State. The increasing interest manifested on this subject, and the fact that the impressions made upon the minds of those who have had opportunities of examining the fine cattle at the various exhibitions are yet fresh and vivid, induces me to offer a suggestion or two through the columns of your Journal.

The unusually high prices which beef and mutton have commanded for some twelve months past renders the question, how shall we produce a large supply to advantage? one of great moment. A full understanding, therefore, of the principles upon which profitable breeding is founded, is very essential to every farmer, but more particularly to those who breed animals for market, whether cattle, horses, sheep or swine. It is now conceded that the causes which influence failure or success in breeding are within the control of man. Such being the case, let every farmer ask himself whether there is any room for improvement in his stock. If upon examination he feels thoroughly satisfied that he has reached the perfection of breeding, or that he has gone so far in the march of improvement that economy says stop, then any suggestion of mine will be fruitless to him. But, if the contrary is the case, if he can feel convinced that a good animal will produce one-sixth more meat or wool, or its value in any other respect can be increased in that or even a smaller proportion upon the same amount of food and attention, then it becomes a duty, not only to himself, but to the community, to ascertain, if possible, how this increase can best be effected. The object to be sought is the greatest pecuniary return with the least possible outlay. What kind of animals are best adapted to secure this end? We are told by standard authorities, that in breeding animals intended for food, "small heads, short legs, and small bone altogether, are essential qualifications, and early maturity is equally desirable. Connected with these points, we always find a peculiarly quiet and indolent disposition—what physiologists would term a lymphatic temperament—which is denoted by a fineness of the skin—a certain resilience to the touch, so to speak, caused by the development of those membranes immediately under the skin, which serve for the deposition of fat, in common with other objects. In cows kept for the dairy, where butter and cheese are the sources of profit, the considerations just mentioned, though not altogether to be lost sight of, are yet secondary to others, such as the development of the lactic or milk system." The same author says, "In the breeding of sheep and oxen for the purposes of the butcher, the grand object has been to establish the supremacy of the belly, and dethrone the empire of the cranium and chest; or, in other words, to preserve and perpetuate that form of the abdomen most favorable to the due performance of the digestive processes, affording the capability of extracting the utmost quantity of nourishment from the food, and at the same time diminishing as much as possible the development of the nervous system, (which would induce too much irritability, and destroy that indolence and quietness so essential for the fattening process,) as well as that of the organs of respiration, which give at once the capability and the disposition for muscular exertion. In the Leicester sheep we have one of the most perfect specimens of the preponderating development of the abdominal or lymphatic temperament, and a striking contrast to the short-tailed sheep of the Orkney Islands, which in form, habits and disposition, approximate to the goats."

From the above brief extracts, it will be seen that close attention to the form and temperaments of animals is essentially necessary to the farmer who would breed them with success and profit. Were it not that I do not wish to intrude upon too much of your space, I might give you more extended extracts. Should these prove acceptable, I may present others in your future numbers. LEICESTER.

Philadelphia, Sept. 20, 1855.

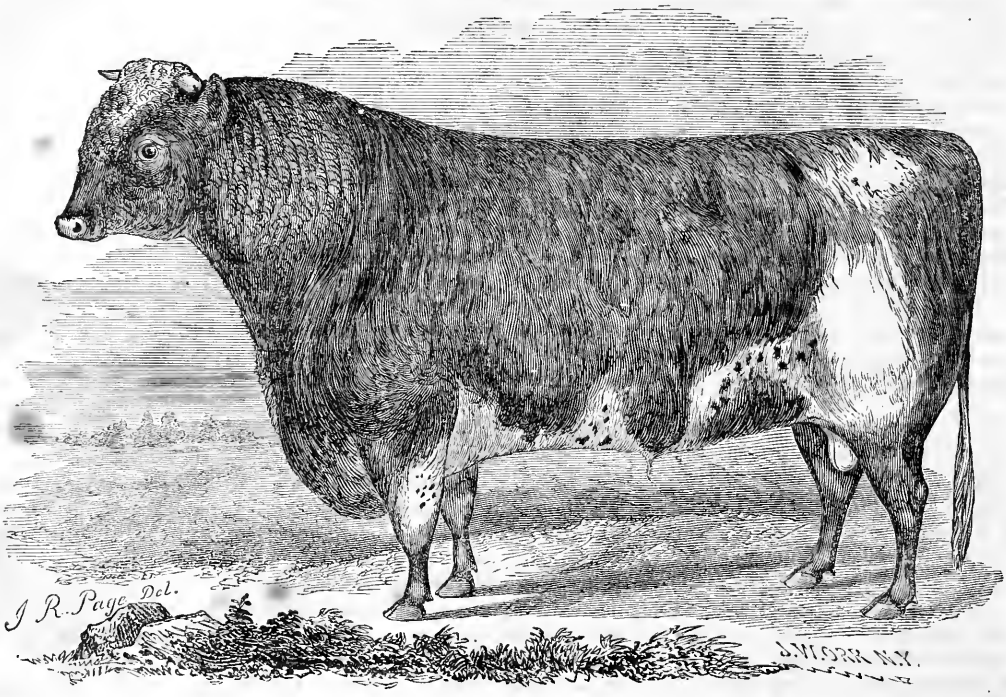
Osage Orange Seed and Plants.

In a conversation recently with a gentleman from a distance, one of the largest dealers in Osage Orange seed and plants in the United States, he stated in reference to the management of the seed, and the difficulty of its germination, that it was the settled experience of his section, instead of soaking it in hot water previous to planting in the spring, to mix it with sand and place in boxes in the fall, and leave out exposed to the weather all winter. The frost acting upon the tough and hard envelope containing the seed, which is almost as tough as that of the peach stone, breaks it open, thus giving the latter an opportunity for free germination.

It is then sown in drills in the spring, and comes up

much more regularly and quickly than by the common method. He also recommends very strongly the practice of sowing the seed where the hedge is intended to be, instead of setting out the plants, and that trimming should be done but once a year, so as to give size and strength to both stem and root, and secure the benefit of the whole season's growth.

The above views, containing the best experience of a district where hundreds of miles of Osage Orange hedging have been planted out, are well worthy of attention. To those who design to plant the coming spring we would say, plow the headland the present fall of the proper width with the double Michigan plow, twelve inches deep; let it lay exposed to the action of the frost during winter, and in the spring, if the soil is thin, give it a coating of manure, and plow down a shallow furrow. Then harrow and pulverize thoroughly, and drill the seed, as suggested above. We believe Osage Orange to be *the hedge plant* for the Middle, Southern and Western States, and that by its general use, at least for all outside fences, millions of dollars would be saved to the country.



"ASTORIA."

"Astoria" is the property of B. & C. S. Haines, Elizabeth, New Jersey. Color, red and white. Sire, imported Duke of Exeter (10152); dam, Creampot 6th by Pontiac, A. H. B., (125); g. d. Creampot 4th by Guarioney, A. H. B., (68); gr. g. d. Creampot by imported Lord Althorp; gr. gr. g. d. Flora Hills by Young Eclipse; gr. gr. gr. g. d. imported Jenny—winner of the first prize in the class of yearling bulls at the show of the American Institute in 1851; also, first prize in the class of two year old bulls at the American Institute and Queens County Show in 1852; also, the first prize in the class of bulls from other States at the New York State Show in 1854.

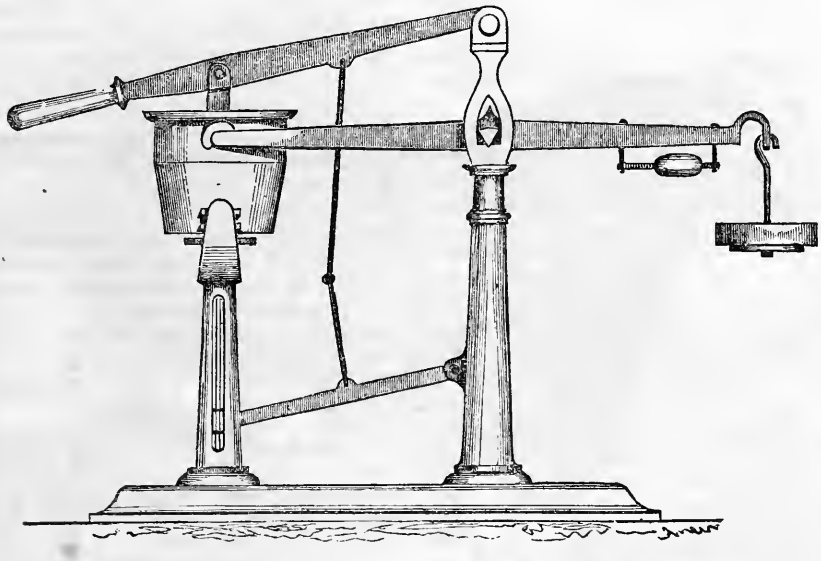
The above beautiful engraving of the very superior bull "Astoria" was forwarded us by his owners, the Messrs. Haines, of Elizabeth, New Jersey, gentlemen not so extensively known as some other breeders, but whose herd, we are informed, contains some very superior and high bred animals. "Astoria" shows some valuable points, such as extraordinary depth from the top of the shoulder to the termination of the brisket, great length and depth of carcass, heavy and well filled hind quarter, and fulness behind the shoulders (a place where many fine animals fall off). His beautifully curved neck and head might by many be thought heavy, but in our opinion are none too much so for a bull. They indicate character and strength, and when accompanied, as in his case, with a mild eye and countenance, such bulls are much more apt to stamp an individuality on their offspring than others with light, cow-like necks and heads.

We have by us a pamphlet copy of the Messrs. Haines, containing several other portraits, with pedigrees of their pure bred Short-Horns, some of which we hope hereafter to have for insertion in the Farm Journal. They are by the same artist, J. R. Page, who delineated for L. G. Morris, are in the highest style of the art, and highly creditable to him as well as the engraver, J. W. Orr. Such *speaking* portraits are calculated to be highly useful.

There is great encouragement at present for breeders of good stock, and it is one of the effects of the rapid settlement and general prosperity of the country, that even with the high price comparatively of farms in the

eastern section of the Union, it is now really more profitable to raise our own stock here, both for feeding and dairy purposes, than to buy them from the far west (we mean, of course, improved stock). Home raised animals are generally more quiet, they feed faster, attain greater weights at the same age, and mature sooner. Butchers are well aware of these facts, and will give more for them.

There are a few farmers now and then to be met with, who, to save five or ten dollars, the cost of putting their cows to such bulls as Astoria, think it more profitable to use a common one for nothing. We think such are wide of the mark, and that the latter plan is much the most expensive. The least first cost is very far from being always the cheapest in the end. The large majority of farmers, however, are fully alive to the importance of obtaining good crosses, and the absolute and aggregate wealth of the whole country has been greatly increased by the efforts of public spirited purchasers and breeders of good stock in various sections.

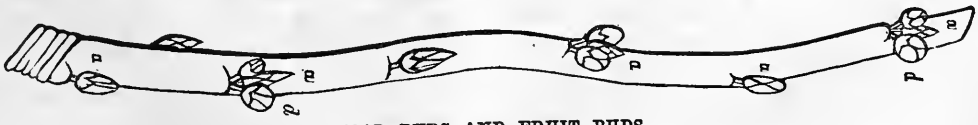


A MACHINE FOR WEIGHING AND BRANDING BUTTER.

The above cut gives at once an idea of a new candidate for public favor, to facilitate the weighing and branding of butter, which it performs with despatch at one operation. It looks to us as if it might be a valuable adjunct to the dairy. The weighing and printing of butter is generally slow and tedious. We already have capital *butter workers*, and if this simple implement answers, which we see no reason to doubt, the labors of the dairy will be much lessened. We understand the price is $15. The patentee says of it:

"By the use of this simple labor saving machine, the butter is formed into blocks of greater density and uniformity than by the usual operation, rendering it more easy of preservation in the summer months, while the rapidity of the action recommends it as a contrivance of great value, not only to every dairy or store in the country, but also hotels and boarding houses.

"Without disturbing the action of the machine, the mould and brand may be changed to any form and size required.



WOOD BUDS AND FRUIT BUDS.

We give the above cut of a peach tree shoot with the view of illustrating the difference between these two kinds of buds, which will be palpable to the most careless observer. All buds are either wood buds or fruit buds. The former, marked a in the cut, are embryo shoots, covered with imbricated scales of a reddish brown. Their form is usually that of a little cone, more or less pointed, and on the peach tree are found on all parts, the young as well as the older wood. Fruit buds, *d*, are always rounder than the others, and are found only on one year old wood. There are also double buds generally consisting of a wood and flower bud, and also triple buds, as in the cut, two flower buds and one wood bud. They are only found on very vigorous trees, the middle eye being the strongest, the side eyes frequently drop off.

The general appearance of these two kinds of buds are the same in other fruit trees as in the peach, and the functions they severally perform should be of course well understood by the judicious pruner to enable him to regulate and preserve a proper balance between the amount of wood and fruit to be matured.

Living in the Country,—Experience of Mr. and Mrs. Sparrowgrass.

"Mrs. Sparrowgrass," said I, "the weather is beginning to be very warm and spring-like; how would you like to have a little *festa?*" Mrs. Sparrowgrass said that, in her present frame of mind, a fester was not necessary for her happiness. I replied, "I meant a *festa*, not a fester; a little fête, a few friends, a few flowers, a mild sort of spring dinner, if you please; some music, claret, fresh lettuce, lamb and spinach, and a breakfast of eggs fresh laid in the morning, with rice cakes and coffee." Mrs. Sparrowgrass said she was willing. "Then," said I, "Mrs. S., I will invite a few old friends, and we will have an elegant time." So from that day we watched the sky very cleverly for a week to ascertain the probable course of the clouds, and consulted the thermometer to know what chance there was of having open windows for the occasion. The only drawback that stood in the way of perfect enjoyment was, our lawn had been half rooted out of existence by an irruption of predatory pigs. It was vexatious enough to see our lawn bottom-side up on a festive occasion. But I determined to have redress for it. Upon consulting with the best legal authority in the village, I was told that I could obtain damages by identifying the animals, and commencing suit against the owner. As I had not seen the animals, I asked Mrs. Sparrowgrass if she could identify them. She said she could not. "Then," said I to my legal friend, "what can I do?" He replied that he did not know. "Then," said I, "if they come again, and I catch them in the act, can I fire a gun among them?" He said I could; but that I would be liable for whatever damage was done them. "That," said I, "would not answer; my object is to make the owner suffer, not the poor quadrupeds." He replied that the only sufferers would probably be the pigs and myself. Then I asked him, if the owner recovered against me, whether I could bring a replevin suit against him. He said that, under the Constitution of the United States, such a suit could be brought. I asked him if I could recover. He said I could not. Then I asked him what remedy I could have. He answered that if I found the pigs on my grounds, I could drive them to the pound, then call upon the fence viewers, get them to assess the damages done, and by this means mulct the owner for the trespass. This advice pleased me highly; it was practical and humane. I determined to act upon it, and slept soundly upon the resolution. The next day our guests came up from town. I explained the law to them, and having been fortified on legal points, instructed them as to remedy for trespass. The day was warm and beautiful; our doors and windows were thrown wide open. By way of offset to the appearance of the lawn, I had contrived, by purchasing an expensive little bijou of a vase, and filling it with sweet breathing flowers to spread a rural air of fragrance throughout the parlor. The doors of the bay-window open on the piazza; in one doorway stood a tray of delicate confections, upon two slender quartette tables. These were put in the shade to keep cool. I had suborned an Italian to bring them up by hand, in pristine sharpness and beauty of outline. I was taking a glass of sherry with our old friend Capt. Bacon, of the U. S. Navy, when suddenly our dogs commenced barking. We keep our dogs chained up by daylight. Looking over my glass of sherry, I observed a detachment of the most villainous looking pigs rooting up my early pea-patch. "Now," said I, "Captain," putting down my glass deliberately, "I will show you some fun; excuse me for a few minutes;" and with that I bowed significantly to our festal guests. They understood at once that etiquette must give way when the pea-patch was about being annihilated. I then went out, unchained the dogs, and commenced driving the pigs out of the garden. After considerable trampling of all my early vegetables, under the eyes of my guests, I managed to get the ringleader of the swinish multitude into my parlor. He was a large, powerful looking fellow, with a great deal of comb, long legs, mottled complexion, and ears pretty well dogged. He stood for a moment at bay against the sofa, then charged upon the dogs, ran against the centre table, which he accidentally upset, got headed off by Captain Bacon, who came to the rescue, darted under our quartette tables,—making a general distribution of confectionery, and finally got cornered in the piazza.

By this time I was so much exasperated that I was capable of taking the life of the intruder, and probably should have done so had my gun not been at the gunsmith's. In striking at him with a stick, I accidently hit one of the dogs such a blow as to disable him. But I was determined to capture the destroyer and put him in the pound. After some difficulty in getting him out of the piazza, I drove him into the library and finally out in the ground. The rest of his confederates were there, quietly feeding on the remains of the garden. Finally I found myself on the hot, high road, with all my captives and one dog, in search of the pound. Not knowing where the pound was, after driving them for a quarter of a mile, I made inquiry of a respectable looking man, whom I met in corduroy breeches, on the road. He informed me that he did not know. I then fell in with a colored boy who told me the only pound was at Dobb's Ferry. Dobb's Ferry is a thriving village about seven miles north of Nepperhan. I made a bargain with the colored boy for three dollars, and by his assistance the animals were safely lodged in the pound. By this means I was enabled to return to my guest. Next day I found out the owner. I got the fence-viewers to estimate the damages.

The fence-viewers looked at the broken mahogany and estimated. I spoke of the vases, the flowers, (greenhous flowers) and the confectionery. These did not appear to strike them as damageable. I think the fence-viewers are not liberal enough in their views. The damages done to a man's temper and constitution shall be included, if ever I get to be fence-viewer; to say nothing of exotics trampled under foot, and a beautiful dessert ruthlessly destroyed by unclean animals. Besides that, we shall not have a pea until everybody else in the village has done with peas. We shall be late in the season with our early peas. At last an advertisement appeared in the county paper, which contained the decision of the fence-viewers, to wit:

WESTCHESTER COUNTY. } 88.
Town of Yonkers. }

WE, THE SUBSCRIBERS, FENCE-VIEWERS OF said town, having been applied to by Samson Sparrowgrass of said town to appraise the damages done by nine hogs, five wintered, (four spotted and one white,) and four spring pigs, (two white) distrained by him doing damage on his lands, and having been to the place, and viewed and ascertained the damages, do hereby certify the amount thereof to be three dollars, and that the fees for our services are two dollars. Given under our hands. this —— day of ——, 185—.

DANIEL MALMSEY,
PETER ASSMANSHAUSER,
Fence-viewers.

The above hogs are in the Pound at Dobb's Ferry.

CORNELIUS CORKWOOD,
Pound Master.

"Under the circumstances," said I, "Mrs. Sparrowgrass, what do you think of the pound as a legal remedy." Mrs. S. said it was shameful. "So I think, too; but why should we repine? the birds sing, the sky is blue, the grass is green side up, the trees are full of leaves, the air is balmy, and the children, God bless them! are happy. Why should we repine about trifles? If we want early peas we can buy them, and

as for the vase, flowers and confectionery, they would have been all over with, by this time, if the pigs had not been here. There is no use to cry, like Alexander, for another world; let us enjoy the one we have, Mrs. Sparrowgrass."

How to Commence Business.

Well, boys, we doubt not that you would like to rise high in the world, and become good farmers, merchants, &c. Here is a good motto for you—Begin at the lowest round on the ladder and keep climbing; and here is a story which will illustrate just what we want to say. One of the wealthiest merchants of New York city tells us how he commenced business. He says:—

I entered a store and asked if a clerk was not wanted. "No," in a rough tone, was the answer, all being too busy to bother with me—when I reflected that if they did not want a clerk, they might want a laborer; but I was dressed too fine for that. I went to my lodgings, put on a rough garb, and the next day went into the same store and demanded if they did not want a porter, and again "No, sir," was the respone—when I exclaimed, in despair almost, "a laborer? Sir, I will work at any wages. Wages is not my object—I must have employ, and I want to be useful, in business." These last remarks attracted their attention; and in the end I was hired as a laborer in the basement and subcellar at a very low pay, scarcely enough to keep body and soul together. In the basement and subcellar I soon attracted the attention of the counting-house and chief clerk. I saved enough for my employers in little things wasted to pay my wages ten times over, and they soon found it out. I did not let any person about commit petty larcenies, without remonstrance and threats of exposure, and real exposure if remonstrance would not do. I did not ask for any ten hour law. If I was wanted at 3 A. M., I never growled, but told every body to go home, "and I will see every thing right." I loaded off at daybreak packages for the morning boats, or carried them myself. In short, I soon became indispensable to my employers, and I rose, and rose, until I became head of the house, with money enough, as you see, to give me any luxury or any position a mercantile man may desire for himself and children in this great city.

Celery.

Celery:—I am induced to submit to the following hints on the cultivation of Celery, which I practiced very successfully many years in the West Indies, and which, I trust, may be found useful to those who may feel inclined to adopt my system. It is as follows:—

Finding the usual mode of planting Celery in trenches 5 feet apart, and "earthing up" laborious and inconvenient, I was led, after making several experiments, to adopt a very simple plan by which much labor and ground were saved by planting the plants upon well manured ground 14 inches in the rows, and the rows 14 inches from each other, in the quincunx order. When they are grown of sufficient length I introduced the leaves, after stripping off the small under ones, its bamboos cut about 12 inches long—the length they admit of between joint and joint, the diameter of each being about 3 inches—and in 11 days I have generally had them beautifully blanched clean and fit for the table. Since my return to England in 1849, seeing some hollow tiles 12 inches, and of the same diameter as the bamboos before mentioned, used for draining land, it occurred to me that a similar method might be practised here; consequently I had a piece of ground well manured, dug, the clods being well broken, and ptanted in rows and distances as before detailed. When the leaves were long enough, the small ones being pulled off, I gathered the rest together in my hand, and put them through the tiles keeping the surface of the ground clean by occasional hoeing; the plants made rapid progress, and after a time I put some half tiles on the top of those first placed, thrusting a stick inside both into the ground, to prevent the wind from blowing them down, and in 34 days the Celery was well blanched. On the 15th December last year, I cut one head, that had a second tile about 10 inches long over the first, which measured 3 feet long and 10 inches in circumference, exceedingly well blanched. Previous to severe weather coming, I put Peas haulm, straw, or dry litter between the tiles with clean straw or dry Fern over the whole to protect the plants from frost. It will be an improvement to have the tiles so constructed as to admit of what may be termed a collar on the under and upper tile, so as to fit on each other similar to a turned wooden box, which will exclude the air at their junction; and instead of sticks, as before mentioned, I would recommend wires of the thickness of a common goose quill, 30 inches long, or thereabouts, formed similar to a surveyor's arrow to be substituted. Should you feel disposed to give my method publicity, further improvements may be made by experimetalists, or even as it is practised by myself will be found very useful.—*James Waters the Rectory, Penshaw, Fence Houses, Durham.*

Remarkable Yield of Wheat.

Editor Farmer, Sir:—I send you the product of four kernels of wheat; if any one can beat it, I would like to hear from them. About one month ago, I was passing along by my wheat field and I saw where it was finished being cultivated in, the cultivator being drawn off from the piece sown to wheat on to a piece which was not sown, and drew a few kernels with it which produced a few scattering stools. My attention was drawn to them by their being so large, so I examined one of them and was satisfied that it was the product of one kernel. I counted the straws and found them to be forty-nine, and concluded when they were ripe I would examine them further. So when I was harvesting by them, I pulled up four stools and brought them to the house for examination. The result was, the first stool had forty-three straws, two of the straws had dead heads that had no kernels in them; the others I shelled and counted the kernels which numbered 1325. The next stool had 56 straws and 1951 kernels; the third one had 56 straws, the fourth one 37 straws; the two last are not shelled, but have large heads and well filled, and I have them on hand if any wishes to see them. H. H. Allen.

Paris, Kent Co., Mich., July 25, 1855.

Recipe for Tomato Figs.

Pour boiling water over the tomatoes, (small sized, smooth tomatoes, are the best,) in order to remove the skin; then weigh them and place them in a stone jar, with an equal weight of sugar. Let them stand two days, then pour off the syrup, boil and skim until the skum ceases to rise. Pour this syrup over the tomatoes for two days, then boil and skim the syrup as before. After the third time they are fit to dry, if the weather is favorable; if not, let them remain in the syrup until the weather is favorable; then place on earthen dishes or plates, and dry in the sun; after which place them in layers, like figs, in wooden boxes, with white fine sugar in each layer. Tomato figs, prepared in this way, will keep for years. A few apples cut and boiled in the remainer of the syrup, will make good sauce of tomato flavor. In drying the tomato figs, use a window sash, and make the frame eight inches deep, and so closely fitted as to keep out the flies; spread the figs on dishes under the glass, turning them once a day for three or four days, when they will be in a condition to pack away in the boxes.—*Mrs. Eliza Marsh.*

Philadelphia Society for Promoting Agriculture

Held their exhibition at Powelton, Philadelphia, on the ground occupied last year by the State Society. Having the *prestige* of that extraordinary occasion, which was perhaps more successful in every respect than any exhibition hitherto held in this country, a large attendance was expected, and was fully realized, the receipts amounting to over $7000. In some of the departments a fine display was made, but in others there was an evident falling off and general disappointment expressed. The amount of fine stock, excepting horses, was inferior to both the Chester and Delaware county exhibitions, and we missed several important contributors of former years, who own some of the finest bred animals in this country, such as Messrs. L. P. REMINGTON, CADWALADER, GOWEN, &c.

From some cause or other, and most unhappily, we think, there has grown up an unpleasant feeling between this and the State Society, which some gentlemen seem to take peculiar pleasure in fostering and extending, to the injury of both. Instead of opening up these difficulties and this bitterness of feeling, which ought not to exist at all, to the public gaze, at home and abroad, we would say, leave such things to the politicians. Abuse and denunciation have become natural enough to *them*, but are out of place in agricultural societies. *Their* object is improvement of the soil, which should be strictly kept in view.

We have rejoiced at the successful result of the Philadelphia Society's exhibition, and hope for the same to the fullest extent of that of the State Society, which, at the time of our writing this, has but just commenced.

Pennsylvania Horticultural Society.

The annual exhibition of this society occurred in Philadelphia at the same time with that of the agricultural though in different places, and attracted as usual a large concourse. Owing to the want of a suitable room for the occasion, the use of one of the public squares at the corner of Market and Broad Streets was granted by the city authorities. This was floored over to prevent injury to the grass, and the articles arranged under capacious tents, which were high enough to enclose a number of good sized maple and other ornamental trees there growing, which made it a novel and interesting feature of the occasion.

The display of fruit in great variety and extraordinary quality seemed to us greater than at any preceding exhibition, and the *profusion* of fine and well grown vegetables, rare plants and flowers, evergreen trees and shrubs in pots, &c., with the tasteful arrangement of the whole, fully confirmed the reputation of Philadelphia as *the Horticultural City—the City of Gardens.* Our private and public greenhouses and conservatories turned out their rare collections, as well as the amateur and market fruit growers and gardeners, who are so numerous in and around the city, the whole producing a display which we do not believe could be *approached* by any other city in the Union. Among other novelties, there were pine apples growing in pots; a fine collection of choice grape vines also in pots, bearing large clusters of grapes; Black Hamburg grapes from the graperies of our fellow citizen DAVID S. BROWN, two bunches of which weighed respectively 5 lbs. 15 oz. and 5 lbs. 10 oz.; also many new and rare evergreens, five and six feet high, giving a complete idea of their character, habit of growth, &c. Among these we noticed Araucaria Excelsa and Braziliensis, Deodar and Lebanon Cedars, &c., with many other rare pines and firs, alone worth a visit to the exhibition.

The Philadelphia Horticultural Society is a credit to the city and State, and by its monthly and annual exhibitions has contributed vastly to create and diffuse a taste for those beautiful embellishments, which have rendered the city and suburban residences of Philadelphia prominent over every other city in the Union.

Delaware Co. Agricultural and Horticultural Exhibitions.

This took place at Media, the county seat, on the 7th, 8th and 9th ults., being the first of the series of county fairs the present fall. We missed the opportunity of being present, but understand it was superior in many respects to the last one, and was fully successful in a pecuniary way and very largely attended. The display of fruits and vegetables was especially large and fine. Several head of imported stock were on the ground, and some fine horses and oxen. The ladies sent in their contributions to a large extent, and the exhibition partook much of an industrial and scientific character. In addition to the usual displays of agriculture and horticulture, Delaware county has for many years sustained her "Institute of Science" in a flourishing condition, with a very respectable cabinet collection in many departments of natural science. This, with an excellent library, has been the means of diffusing a spirit of improvement among her residents. An excellent address was delivered by A. R. MCILVAINE.

Chester County Agricultural Exhibition.

This took place on the 21st and 22d insts., and barring the unfavorable weather of the first day, which no doubt prevented a larger attendance of people, as well as kept away many contributors, it was as fully successful as last year. There was more good stock there than at the Philadelphia or any other county exhibition that has occurred this season so far. The Chester county farmers have *more generally* gone to greater expense in procuring choice stock of cattle, sheep and swine, than any other county in the State. Individual cases there are in Delaware and Philadelphia counties where larger investments have perhaps been made, but in no other county is fine stock so *generally diffused*, or so large displays made. The herd of ANTHONY BOLMAR alone comprises some twenty-five head of noble cows, either of which would attract attention anywhere. There were also two young Durham bulls on the ground from the State of New York, and one from Kentucky, introduced by Chester county farmers, which will make valuable crosses, and contain some of the best Durham blood now in the country. A large number of grade animals, containing more or less of Devon, Durham and Alderney blood, were exhibited, indicating the prevailing disposition for the improvement of stock. Some of the best Southdowns now in this country were shown by Messrs. Cope and Worth, whose flocks are already widely known. Also superior Cotswolds by J. KINNARD and JOS. SEEDS.

A buck of the latter weighed 212 pounds. There was a very fine team of three pair of mules, admirably broke and managed, and some good horses; but the display in this department was quite short of what it should have been.

The fruit and vegetable departments were well represented in quality, but the horticultural exhibition of the preceding week no doubt interfered to lessen the number of contributors, who had already displayed there many of their choicest specimens.

The swine were chiefly of the Chester county breed, and of the best quality. These are generally preferred by the farmers to either Suffolks or Berkshires, although the latter have some warm advocates.

Owing to the success of the two past exhibitions of the Chester County Agricultural Society, they have concluded to purchase a lot of ground, and erect permanent accommodations for the future.

Chester County Horticultural Society

Held its exhibition one week preceding that of the Agricultural. The attendance was not so large as usual, proving the expediency hereafter of holding both simultaneously, which last year proved a mutual advantage. The display of fruits was the best we have seen this season, excepting at the exhibition of the Philadelphia Horticultural Society. Chester county farmers are wisely turning their efforts in this direction. Greenhouse plants, flowers and vegetable productions, always numerous and good at this society's exhibitions, fully kept up their reputation this season, and the collections contained many new specimens recently introduced. Altogether the exhibition was a highly creditable one.

Management of Orchards.

We hear general complaint of the decay of orchards in this section of the State. Many trees appear to be dying, or very unthrifty, even those not long planted. Such as bear, produce defective, imperfect fruit, and some farmers have even cut down their orchards, so as to occupy the ground with crops, which they think will pay better. Notwithstanding the above facts, which are often brought to our notice, we still decidedly believe that growing apples, pears, plums, cherries, raspberries, strawberries, &c., is the most profitable use that can be made of a large portion of our farms in sections convenient to market. All that is wanting is to give our trees the *same attention* we give our other crops. In ordinary seasons no farmer would admit his inability to grow a crop of corn, wheat, or potatoes. *We* say, study in the same way the *habits of trees*, the conditions essential to their health and productiveness, and it is as easy to grow good apples and pears as good corn and potatoes. Would a farmer expect a full crop of corn if he planted and allowed to grow six or eight grains in a hill, and never passed the cultivator through the rows to stir the soil and kill the weeds? Would he look for a crop of potatoes if he applied no manure, or dropped the sets on top of the ground? No; he well knows such management, or want of management, would ensure failure. Fruit trees, however, are supposed to have peculiar constitutions, such as will thrive under neglect, and bear regularly large, perfect and delicious specimens without any attention. In at least two-thirds of the instances, they are in the first place not half planted, but crammed into small holes in contact with cold, sterile unprepared soil, destitute of the proper food they require. Then again, as "*ground is scarce*, even on two and three hundred acre farms, the young orchard must be cropped with the regular rotation and laid down to grass, which is allowed to grow up to the very trunks of the trees. The stock are now and then turned into it, particularly the sheep and calves, "it is so convenient." No pruning is done in proper season, and in a proper manner, for want of time. The bark is allowed to become hard, mossy, and often covered with the bark louse; the apple borer, a curious little fellow, often unobserved, finds an entrance, and lives in undisturbed security. The idea of applying lime or manure, or that trees require a regular supply of fertilising materials, is ridiculed as wasteful. The very natural conclusion then follows, that fruit growing will not pay.

On recurring back to a period of twenty-five or fifty years ago, when orchards were thrifty, and no difficulty was found in growing fine fruit, we find many circumstances to have been more favorable than at present, or, in other words, more care is required now than was then. In those days there was no relentless war waged against the birds, and consequently insects of various kinds, which prey on both fruit and trees, were not so destructive. In the beautiful economy of nature there is always true harmony, and destructive agencies or elements are stayed or modified by counteracting influences. In every thing is seen *design*. The carbonic acid in the atmosphere evolved by respiration, combustion and decay, is necessary for the growth of plants, which absorb it, retain the carbon, and give out oxygen into the atmosphere to reform carbonic acid. The circle is always completed. Nothing is created in vain and nothing lost. We believe the over-increase of insects, which often defeat the best efforts of the husbandman and orchardists, was intended to be restrained by their being made the food for birds, and that the destruction of the latter is *one* very prominent reason for the depredations of the former, and that the bad effects are especially observable in the difficulty of raising *good* fruit. We shall speak of other reasons in future numbers, and also the remedies, but have space but for this one at present. Before the young *men* of the present day are fairly in their teens, (there are no boys now,) they may be seen with the gun on the shoulder waging in cruel sport an indiscriminate warfare against the birds, both large and small. Their *education* is not considered complete unless they can kill a wren or tom tit at forty yards. To do this is considered quite *manly*. As a reward for application to business, rearing a fine calf, or special attention to some other department of the farm, they are promised the height of their ambition, "a new gun, with a double twist barrel, just from London," with which they may be able to take a more deadly aim at the poor birds.

Seriously, we think parents and others, who have the care of children, are bound to discourage, from a regard to their own interests, this prevailing fondness for gunning, which we are confident is *one cause* of the rapid increase of insect enemies to fruit as well as ornamental

trees, vegetables, and other productions, both of the farm and garden.

The grape vine now has its borer, *Ægeria*, as well as the *alypia octomaculata*, attacking and eating up the leaves about midsummer, and a grape vine beetle, *Haltica*, which destroys the fruit buds early in the spring. Pear trees have the slug worms, *Tomicus*, which destroy the leaves, the bark louse, and the *Psylla* or jumping louse, which punctures the bark of young shoots near the buds, and lives by suction. Peach trees, the *Ægeria exitiosa* or peach borer, and another insect, *Tomicus liminaris*, which lives under the bark. Cherry trees have their canker and slug worms, and weevil. Plums, the curculio and slug worm, as well as other insect enemies not yet known, and apple trees also their peculiar depredators. All these appear to be largely on the increase, and it is a matter of general interest how far it may be attributed to the destruction of birds.

Durham Stock.

As a matter of reference, we copy from a letter of L. G. MORRIS to the Boston Cultivator the subjoined list of his fine stock lately arrived in Philadelphia per the Oliver Jordan:

MINERVA 2D, roan, calved Janury, 1850. Sire, St. Marum (8525), dam (Minerva) &c., &c.

IRIS, roan, calved June 8th, 1850. Sire, Louis D'Or (9336), dam (Lady Love) &c., &c.

MINERVA 4, red, calved Feb. 1st, 1853. Sire, Lord Warden (7167), dam (Minerva) &c., &c.

VICTORIA 26, red and white, calved March 25, 1853. Baron Warlaby (7813), dam (Victoria 4th) &c., &c.

OXFORD 16, red roan, calved May 17th, 1853. Sire, 4th Duke of York (10,167), dam (Oxford 6th) &c., &c.

SURPRISE, roan, calved January 23d, 1854. Sire, Gillivan (11,520), dam (Silence) &c., &c.

LOUISE, red, calved May, 1854. Sire, Sweet William (12,161), dam (Lucy) &c., &c.

DELIA, roan, calved Nov. 24th, 1854. Sire, Duke of Glo'ster (11,382), dam (Delia Gwynn) &c., &c.

OLIVER JORDAN, red and white, calved July, 1855. Sire, Duke of Cambridge (12,742), dam (Iris) &c., &c. This calf was born on the voyage, and named after the vessel.

We also have brought out our young Duchess 71st, the progeny of our celebrated cow Duchess 66th, (the 700 guinea cow). This heifer calf, as you may recollect, we bred in England, and was got by Duke of Glo'ster. We refused 700 guineas for her this spring, just before shipping her for this country.

American Herd Book.

The American Short-Horn Herd Book, of 650 pages, by L. F. ALLEN, is just issued as we are going to press. It contains 2700 full pedigrees and upwards of fifty portraits. Price to subscribers $5; non-subscribers $6. If sent by mail, 45 cents must be added to prepay postage.

Culture of Cranberries.

Those of our readers intending to commence the cranberry culture are referred to our advertising pages for plants. F. TROWBRIDGE has had large experience in their culture and sale.

Raising Calves.

The following method pursued in England for raising calves, we copy from one of our English papers. Now, that the raising of stock has become profitable in the Atlantic States, the best and cheapest plan to keep them in thriving condition from the start is a matter of some importance, and perhaps the secret of profit. Young animals should not be forced prematurely by high feeding, nor, on the other hand, should they be allowed any check by scanty food or want of shelter. The aim should be to *keep* them in a thriving and growing condition. The daily use of the card or brush through the winter and entire cleanliness will be found important:

"Calves at a month old, by the first of April, have proved to do well on half a pint of good oatmeal, or the same quantity of linseed mixed in a little cold water, and boiling water poured over it, making the half pint of meal or linseed into two or three quarts of liquid. This should be mixed twelve hours before given to the calves, as it should stand this time, and the vessel being covered it will be found then of sufficient warmth. Best Scotch oatmeal is most economical, and is perhaps better than linseed. It should be given at first with a small quantity of milk, or the calves having been fed previously only on this will not readily take to this food; together with this, hay and some roots are a good preparation for their taking to grass. Six weeks of this feeding will suffice, giving them the mixture only once a day the last week, and lowering its quality, to wean them from it; and by this time they will take to grass as their only and sufficient food, if good wholesome pasture. Water should only be given very sparingly when required from drought, and on no account should calves at grass have unrestrained access to spring water. As the nights get cold in October, they should have a small quantity of hay, and the tops of carrots or early turnips will now forward their growth until December, when a regular supply of Swedes, with chaff of oat or barley straw, will keep them in good growing condition until the time for grazing, or they might be kept well through the summer on chaff and a plentiful supply of mangold wurzel until early turnips take its place. This treatment should be repeated the second year, unless steers are intended to be fattened at two years old; therefore, in October, at one year and a half, or at two years and a half old, they should get chaff of good hay, with two quarts of barley or other meal, either from oats, beans, or tail wheat, or instead of meal three lbs. of oilcake, with as many Swedes as they will consume given them twice each day, with no water. Heifers should be kept on similar treatment until the last winter before calving, when roots are not needed, and can be given to greater advantage to other stock, as a plentiful supply of straw, and a little hay, for the last two months before calving, is more healthy and likely to avoid risk from inflammation. At this time good hay, good water, which is very essential, and good pasture, is the staple food for cows in milk and during the three months of winter, December, January, and February, during which time it is usual they are dry before calving. The straw-yard, as beforesaid for heifers, with a good supply, a stream of water, shelter, and a little hay added a month before calving, will keep cows in good condition."

Prospective Prices of Produce.

The farmers of the Great West have doubtless secured the most bountiful crops of grain ever grown on their prolific soil. Even supposing their Indian corn to be shrunk one-fourth by excessive rain and early frost, the year's product of food for man and beast will yet be beyond example. After reserving generously for their own wants, they will still have an immense surplus to sell either directly as grain, or in the more concentrated orm of beef and pork. And, as yet, there is a promise of a liberal reward for their toil. Every one must judge for himself as to the policy of selling this fall or holding over. Should the great war continue and extend, there is a strong probability that the prices of next spring will be at least as high as the present. And with such prices there is no reason why the great majority of farmers should not make a profit on the year's operations —reduce if not extinguish their debts, improve their lands, increase their stock of cattle and their variety of implements, and place themselves in position to grow a still larger crop next yeas.

Against one risk—that of selling for baseless promises —it might seem needless to proffer caution; yet we know that thousands, undeterred by the sad experience of others, will sell their grain or cattle for the notes of speculators, if they can thereby secure a higher price than would be paid in cash. But why should any sane man do this? Grain and meat are cash articles; they can be turned, by the help of our public works, inside of sixty days at furthest; and men who have any right to credit can obtain money enough from good banks to buy and send abroad produce. No buyer who ought to be trusted will ask a farmer for credit, for he perfectly understands the advantage of buying for cash. Whoever asks a farmer to trust him for his grain or stock until it can be sent to market and sold, thereby confesses himself unfit for his business, and unworthy of credit. There may be exceptions; but the general rule is clear, that whoever, in times like these, has any business to buy produce at all, can get money of those who make a business of lending it to better advantage than he can buy on credit of those who need their pay.—*New York Tribune.*

Pennsylvania Farm School.

The Pennsylvania Farm School has been definitely located by the Board of Trustees in Centre county, on land donated for the purpose by General Irvin. We had hoped ere this to have had the minutes of the meeting for publication, with description of the property and its advantages over other places in different sections, also offered on favorable terms. The trustees have no doubt acted for the best, and having before them all the data for a correct decision, which the public as yet have not, it is only fair to presume that the location in Centre county under all the circumstances was the most desirable.

We think the farmers in this section of the State have very unwisely allowed this opportunity to slip by them. The very liberal offer in our late number of $1000 was not seconded, or met in a proper spirit, and till the progressive spirit of the times requires the establishment of another Farm School in Pennsylvania, we shall be without *many* of the advantages which would have resulted from its location here. This, however, is comparatively a small matter—the main thing being to establish the school under the right auspices, and somewhere in the State, so as to be open to pupils from every section.

The selection of Charles B. Trego as Principal of the school, we think has been most fortunate. Having had large experience as a teacher, filled a prominent position in our legislature, being a practical farmer, author, and of well acknowledged scientific reputation and ability, the warmest wishes of the early friends of the Farm School, we hope and believe, will be realized.

We shall give the earliest information about the opening of the school, which will probably be the coming spring.

Pumpkin Borer.

Alexander Scott, an intelligent and enterprising farmer of Delaware county, occupying the Haverford school farm, was recently showing us specimens of his pumpkin vines, the centres of which had been entirely eaten out by insects. His whole field was attacked in this way, and the vines destroyed. The single one handed us contained more than twenty of these little borers. We have frequently known single cases of squash and pumpkin vines thus attacked, but never before such wholesale destruction of an entire field. The insect is the *Ægeria cucurbitæ* of Harris, and belongs to the order *Lepidoptera.* Harris says of them, "During the month of August, the squash and other cucurbitaceous vines are frequently found to die suddenly down to the root. The cause of this premature death is a little borer, which begins its operations near the ground, perforates the stem and devours the interior. It afterwards enters the soil, forms a cocoon of a gummy substance covered with particles of earth, changes to a chrysalis, and comes forth the next summer a winged insect. This is conspicuous for its orange colored body, spotted with black, and its hind legs fringed with long orange colored and black hairs. The hind wings only are transparent, and the fore wings expand from one inch to one inch and a half. It deposits its eggs on the vine close to the roots, and may be seen flying about the plants from the 10th of July to the middle of August."

We know of nothing in the way either of remedy or prevention.

Pedigree of St. Lawrence, Jr.

The following pedigree of the fine young bull St. Lawrence, Jr., purchased in Kentucky by T. H. Brinton, of Delaware county, and now on his farm near Chadd's Ford, was accidently omitted in a former number:

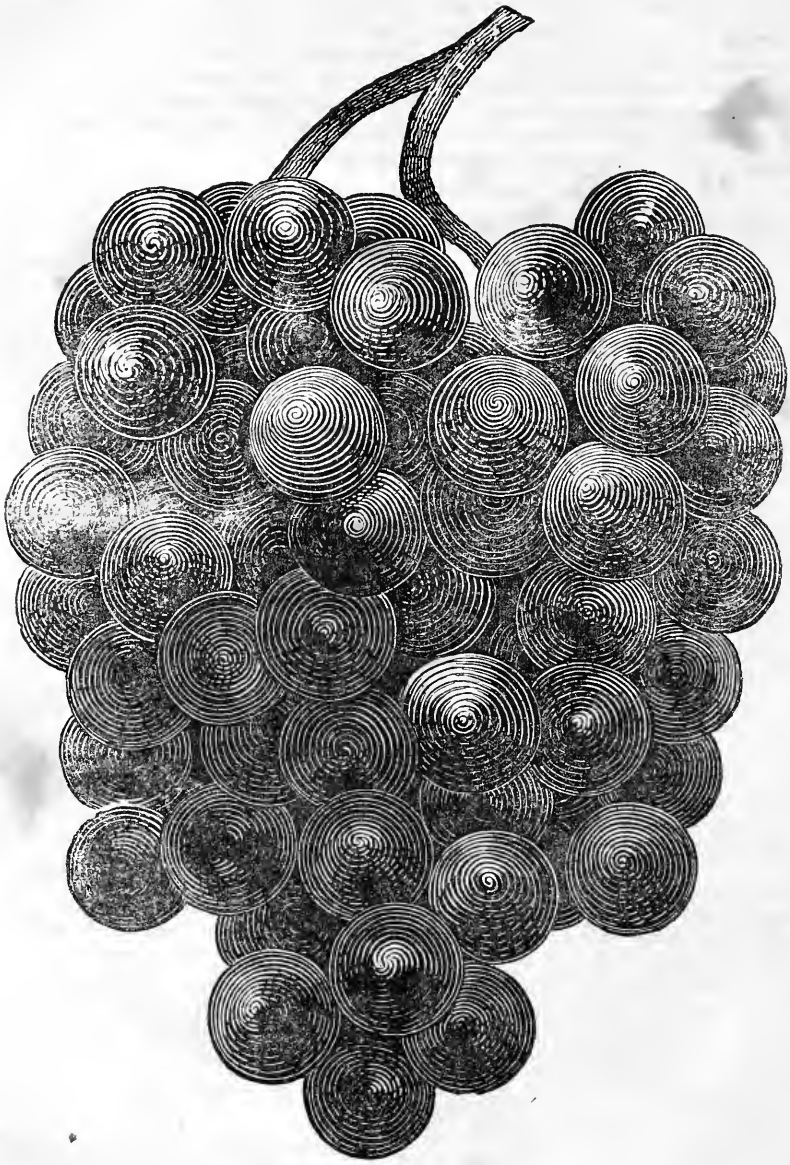
Calved September 15th, 1854, color roan. 1st dam Dutchess was got by Value;* 2d dam Ann Fish was got by Jake; 3d dam imported Lady Littleton was got by Rammiculus (2479), E. H. B.; 4th dam The Kicker in England by Memmon (2294), E. H. B.; 5th dam The Kicker in England by Ratify (2431), E. H. B.; 6th dam The Kicker in England by Leighton's Logic (4248), E. H. B.

* Bull Value was got by 2d Locomotive (a very superior bull of Mr. Bates' stock,) (4242) E. H. B. His dam was the imported cow Clald.

Death of Philip Pusey.

Our foreign papers inform us of the decease of Philip Pusey, a distinguished Agriculturist of England, Editor of the Journal of the Royal Agricultural Society, and also member of Parliament.

His whole time and energies were successfully devoted to the interests of agriculture, by numerous essays, local and general reports, his own successful practice of farming, and by his advocacy, in his public position, of the rights of the tenant, all which, has endeared him to the memory of British Agriculturists as their friend and benefactor. He will be greatly missed.



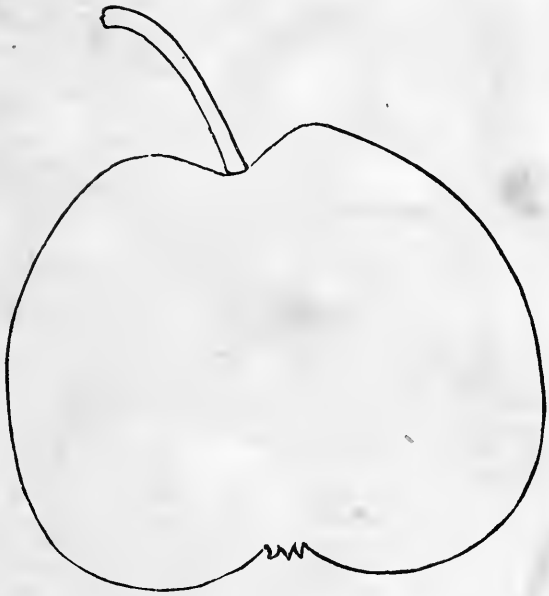
EARLY NORTHERN MUSCADINE GRAPE.

The above cut was furnished us by P. STEWART, of New Lebanon, New York, the originator of the Northern Muscadine Grape, accompanied with samples of the fruit. Owing to the season, we were informed the bunches were much smaller than usual; but they were very compact, and the grapes large and perfect. We thought in flavor, size, and also in respect to pulp, they were much superior to the Isabella. The price of roots varie according to size from $1 to $3. If any of our readers wish to procure roots of the Northern Muscadine, we will undertake to send on orders. A northern paper on our table speaks of it as follows:

"The Early Northern Muscadine is a seedling from the Native White Grape, and was first produced some

ten years or more ago. Since then it has been gradually perfected, and the one of whose bearing qualities the above cluster is a fair sample was selected from *forty varieties* as the choicest and best, has been tried under every variety of circumstances, and for richness of flavor, juicyness of pulp, beauty of cluster, productiveness, hardiness and general adaptedness to our Northern climate, is undoubtedly destined to take rank over every variety in use in this latitude. As a wine and table grape competent judges have pronounced it superior in every respect to either the Catawba or Isabella. However this may be, there is no question but what it possesses intrinsic advantages peculiar to itself alone.

"The great requisites for a grape in our rigorous climate, after producing a choice fruit, are *ability to stand our winters and ripen in our summers.* Both these qualities the Catawba and Isabella lack to a greater or less degree, it being difficult to raise them and more difficult to make them productive. The Northern Muscadine being a seedling of our Native White Grape, it possesses all the hardiness of that species, while it frequently ripens as early as the first of September, and always a month or six weeks earlier than the Isabella or Catawba. The berry of the Muscadine is likewise fully as large as that of the Isabella, has a beautiful light amber color, thin skin, a small juicy pulp, and a sweetness and richness of flavor which many regard as quite superior to that of the Isabella, as ripened here. It is moreover easily raised, and when grown becomes a sure and constant bearer.



BEURRE GOUBAULT.

This fine pear originated at Angers, France, and is worthy of extensive cultivation in the United States. Downing says it is one of the most vigorous and beautiful trees as well as productive in this country. The texture of the fruit is like the summer Franc Real, soft, juicy and refreshing, which it also resembles in the color and spotting of the wood. It is, however, much more vigorous and rapid in growth. It even outgrows the Duchesse D'Angouleme on the quince, takes the pyramid form easily, and while growing freely, bears profusely.

Fruit, round, tapering slightly to the stalk, very smooth, regular and uniform; skin, greenish yellow at maturity, sprinkled with green dots; stalk, an inch or more long, set in a narrow depression; calyx, open, large, in a smooth, shallow basin; flesh, white, very juicy, melting, sweet, refreshing and pleasant; should be gathered and ripened in the house; ripens from the last of August to the first of September, immediately preceding the Bartlett.

Curculio on Plum Trees.

It is stated that Mr. John Brush, of Brooklyn, New York, has saved the plums on a number of trees the present season by binding bunches of tansy upon the limbs in several places. The fruit upon the trees thus treated ripened to perfection, while that near by, not thus protected, was entirely destroyed by the insects.—*Scientific American.*

Dried Peaches.

Peaches as usually dried are a very good fruit; but can be made vastly better if treated in the right way. Last season, the receipe, which had quite a circulation in the papers, of drying the fruit by a stove after halfing it and sprinkling a little sugar into the cavity left by the extracted pits, was tried in our family. The fruit was found to be excellent; better to the taste of nine out of ten persons than any peach preserves, by far. The peaches, however, were good ones before drying; for it is doubtful whether poor fruit can be made good by that process or any other.—*Prairie Farmer.*

Breeding Cattle for Fattening.

We copy the following article from the Wool Grower and Stock Register. As this is the season for farmers to lay in their stock cattle, some useful hints will be found in it, although chiefly intended for English Graziers. Of course the use of oil-cake, turnips and swedes, for fattening, does not apply here, yet we think a mistake is also frequently made here of not commencing stall feeding early enough in the autumn.

"I will here give the substance of a prize essay on fattening cattle by George Dobits, in the Royal Agricultural Society's Journal, containing, as it does, many very valuable suggestions as to the selection and care of animals.

"The first point," he says, "is to have a good sort of bullock to begin upon, not to recommend," he says, "any particular breed to the depreciation of all others, because different localities require different descriptions of animals; but to caution breeders that it is right to select the characteristic marks of the breed they intend purchasing, to warn them particularly never to purchase a coarse, ill made, bad-bred animal, because they may fancy it cheap. A man has never got so bad a bargain as when he has, as the saying is 'got too much for money.'

"The first criterion for judging of the disposition of the beast to fatten quickly, in my opinion, is that peculiar, soft, supple feel of the skin which is commonly called handling well. This is generally accompanied by hair of a soft, fine quality, in great plenty. The eye should be full and clear, and the head well formed; the shoulders not upright but lying well back; the chest full; the ribs deep, and well arched out; the flanks well down; the hips nearly level with the backbone, and in proportion to the rest of the carcass as to width; the rump wide, and not too low, appearing as if, when fat, the tail and rump ends would be level (but this the butchers in my neighborhood are in the habit of calling the fool's point;) the purse should be of full size and soft to the touch (this I consider a material point,) the twist good, and the legs short and small in proportion to the carcass, as the offal will be light in proportion to the leg-bone.

"Next observe the temper of the animal; in selecting from a considerable drove you will often find beasts possessing many of these good points, yet in a lower condition than some of the animals of a worse appearance. Consider well whether this may not arise from the masterful disposition of the ill-made one, and whether, when put to fatten where every beast may eat his share of food without disturbance, the good bred one will not soon surpass his more masterful neighbor. If you observe a beast that is constantly watching an opportunity of goring any other that comes in his way, leave him behind, even if he is much heavier than those you select; he may be a great trouble to you; and although the jobber may think you have selected them badly, he will sell them according to what they are worth at the time, and the present weight is the great point with him. For this reason always select the animals before purchasing, rather than agree to give a certain price per head to pick where you like from the drove."

"I think the quality of an animal is of more consequence than his form for common fattening purposes, but have both good if you can. But if you are thinking of fattening an animal to show for a prize, be sure to have his form as perfect as possible, for all the flesh you may lay on him will not hide any great defect in his form; also ascertain if possible how the animal is descended; ten to one but the progeny becomes similar to the progenitor. But this is generally a most unprofitable affair, and I strongly recommend all young farmers to leave it in the hands of those gentry who can afford the loss, many of whom there are in the country, and they deserve our best thanks for their patriotism, for it certainly shows the capabilities of different breeds, and thereby enables the observing farmer to profit by the experience of others. Never buy any animals that are excessively poor; they will consume a great deal of food before they are got into health enough to fatten, for depend upon it, unless your animals are well bought, fattening cattle will never pay enough to *leave the manure clear profit*, which it ought to do, although I fear with the majority of farmers it is far otherwise."

"SUMMER GRAZING.—I shall say but little with respect to summer grazing, as the wording of the Society's advertisement appears to apply more particularly to winter fattening; merely remarking that the fences should always be kept thoroughly good, a weak place being strengthened before it becomes a gap—prevention, in this case, like many others, being better than cure; that the bullocks should be well supplied with water, and have plenty of shade; never allow them to be frightened by dogs, &c.; treat them kindly, and they will soon cease to fear your presence; do not let a day pass, if you can help it, without seeing them. There is an old saying, which ought to be impressed on every farmer's memory—it has been of great service to me in the course of my life—it is:—'The master's eye grazeth the ox.' A friend of mine has lately adopted a plan, which, under the circumstances, I should strongly recommend—it is that of giving a small quantity of oil-cake to animals grazing, for the sake of improving an ordinary pasture, and its effects are astonishing. The pastures I allude to are small, and one or two bullocks more than they are calculated to carry are put into each; the lot are then allowed four lbs. of oil-cake per day, per head; this, at a cost of about two shillings per head per week, which I believe the stock well paid for, has entirely altered the face of pastures from what they were three years ago, when the plan was first adopted by him, and I believe without any loss to himself."

"WINTER FEEDING.—I now come to the point of winter feeding. *First*, as to the places in which they are kept, I unhesitatingly give my opinion in favor of stall feeding, for all the common purposes of grazing, but not for young beasts that are to be summered again, or for prize oxen; the former should have small, well sheltered yards, with good sheds—if the fences are so high that they cannot see over, it is much the better; and the latter, loose boxes, with plenty of room for them to walk about, because they have to be kept up for such a long period, that, if no exercise were taken, the health might suffer. It is the abuse of stall feeding that has got it into disrepute with some people, and the not treading down straw enough with others. This last I hold to be an advantage, instead of a disadvantage; for depend upon it it is not the size of the dunghill, but the quality of the manure that causes the farmer's stack yard to be well filled. If managed well, I contend that there is no plan so good as stall feeding. The fattening house may be of any size or shape, but it is necessary that there should be underground drains, with gratings, to carry off the urine into the liquid-manure tank; shutters behind the bullocks, to regulate the heat, and a wide passage at their heads to feed and clean their mangers. The advantages I conceive to be the quantity of litter required being smaller, therefore the muck being made better—the temperature being more easily regulated, and every bullock being allowed to eat his share in peace. The disadvantage of the animal not being able to rub himself as well, I consider fully done away with by the rough brush which you will observe I recommend using, and although theorists may fancy the health of the animal likely to suffer, I have never found it so in practice."

"Now with respect to their food, so much does this vary

(from the plan pursued by some people with an ox intended to be shown at Smithfield, in a class restricted from corn, cake, pulse, &c., &c., *which has the cream of several cows given him* by way of compensation, to that by the man who endeavors to fatten his animals on turnips and barley straw,) that it would take up far too much of the Society's valuable journal even to enumerate them. I shall, therefore, simply give the plan I recommend, leaving my readers to follow it if they like, and improve upon it whenever they can."

"I think in many instances stall feeding is not commenced early enough in the autumn. As soon as the weather becomes damp, and the days shorten much, some say in October, the grass in my neighborhood loses its feeding properties, and then the sooner your bullocks are put up the better. For this purpose, I recommend having some of the large, forward descriptions of turnips provided, perhaps the 'red tankard,' although watery, and soon becoming of little value, are at this early season the best of any, from their early maturity; these are sown in April, at the rate of an acre to every eight bullocks, which will last them three or four weeks, according to the crop, and leave a light fold to begin the sheep upon; at the end of which time the forward Swedes are ready to begin. During this period I give them little or no oil-cake, if they are only in moderate condition, but they have half a stone of pollard a day, mixed with an equal quantity of hay or straw chaff. Some persons may fancy this food is of too loosening a nature, but I can assure them, from several years' experience, that although pollard is loosening itself, yet it has the effect of preventing the watery white turnip from purging too much. Although the bullocks do not gain much in weight during this time, yet I am satisfied they go on faster afterwards; the reason of which is, I suspect, that their bodies are more prepared for the artificial state they have to live in for the next few months.

Early in November the food must be changed to Swedes, cake, &c., the quantities of each must vary according to circumstances; the following I consider a good allowance where Swedes are not scarce, if they are, more oil-cake must be given instead of a part of them, or if very plentiful they may be allowed even more. The morning's bait, one bushel of Swedes, well cleaned from dirt and cut small, given a few at a time—then, the refuse pieces being well cleaned and a dry bait consisting of 2 lbs. of oil-cake, 3 lbs. of pollard and a little hay chaff. While they are feeding, the manure and wet litter must be well cleared away, and which may be on the bullocks taken off, the floor swept clean, and plenty of fresh litter put in; then have every bullock well brushed with what is called a dandy brush—being a brush made with whalebone, for taking the rough dirt off of horses. (Let no slovenly farmer fancy this to be a whim of mine; depend upon it, the bullocks are kept in much better health and greater comfort for it.) They must now be left quiet; they will soon lie down and rest, and chew the cud till after dinner, when another bushel of Swedes is given as before, in small quantities, followed by a similar dry bait of cake, pollard and hay chaff, but with the addition of 3 lbs. of bean meal—this is left with them at night. Be careful that the shutters are opened or closed, according to the weather, so as to maintain an even warm temperature—but not hot enough to make them perspire, if it can be avoided. Be also careful that the mangers are well cleaned out between every bait. I have mine cleaned at the commencement of the season, and as often afterwards as I think necessary, with scalding water and the scrubbing brush."

"After a month or so the cake may be increased, and if it is thought more convenient, the Swedes may be changed for mangold wurzel. Many persons object to using mangold until the spring; they certainly are more valuable than Swedes in the spring, and, therefore, should always be used last. Never change from mangold wurzel to Swedes, after you have once begun them, or the bullocks will not go on so fast; but if, from having a bad crop of Swedes, or from any other cause, you want to begin mangold early, you have only to lay them exposed to the air for a week or two, to wither, and they may be used as early in the season as is required."

"It will be observed that cleanliness, warmth and quiet, are the great points I insist upon, of course coupled with good feeding; but very many tons of oil-cake are annually wasted because the comfort of the animals is not more attended to. It will also be observed that I have introduced a cheap article of food, which, I think, does the beasts more good, in proportion to its cost, than anything I give them; I allude to pollard, or miller's offal, as some call it. This I generally purchase at £4 15s. a ton. I have used it extensively for some years, and like it much. Some of my neighbors are now following my example."

"Before I conclude, I wish to give these recommendations respecting selling the bullocks when fat: Do not determine upon parting with them exactly at a given time; but if a butcher wants to buy a part of them, a few weeks before you think they are ready calculate how they are paying for what they have eaten—and, if you feel satisfied on that head, do not run the hazard of getting a bad sale by refusing a good offer, or perchance the opportunity may not return. Sell them to butchers at home if you can. Always estimate the weight and value of your bullocks the day before any one is coming to buy them; and, after letting the butcher handle and examine them well, let them out into a yard for him to see—they will always show better than when tied up."

Ringbone in Horses.

From a late article on this subject by Mr. Percival a distinguished Veterinary Surgeon, we learn that this affection, for which there are so many "sure cures," arises from a weakness of the pastern joint, and what is called ringbone is a *callus* formed around it for its protection and support. If we could succeed in removing this enlargement by the cross incisions with a chisel, or by binding on live toads, or by cutting out little bladders—which, *bursa* by the way, belong there and have nothing to do with the ringbone—or by compelling the horse to wear a bar of lead, to drive the bone down through the hoof, we should do—Well, what? Why, we should remove the splint with which nature supports the weakened joint.

In process of time this joint, too weak for its duties, is mended by being made stiff, yet more or less of the temporary apparatus for its support always remains. So the imperfect use of the foot that follows, is not due to the bony tumor, but is a consequence of the stiff joint.

This disease is more likely to occur in colts of a peculiar formation of foot and of weak constitution, and as both of these matters are transmitted in breeding stock, ringbone is a hereditary disease, and so horses or mares affected with it should not be used for reproduction. The practice of American farmers of breeding from mares so heavy, spavined and ringboned and otherwise diseased so as to be worthless for any other purpose, will soon deteriorate the best imported blood. Mr. Percival, on the causes of this affection says:

"A coarse or half bred, fleshy or bony-legged horse with short and upright pasterns, is the ordinary subject of this disease; and there exist satisfactory reasons why we should expect him to be so. The pastern and coffin bones constitute the nethermost part—the pedestals—of the column of bones composing the limbs, and being so, they receive the entire weight and force transmitted from above. The pas-

tern, being long and oblique in position, receives the superincumbent weight in such an indirect line, that, bending towards the ground with the fetlock, nothing like jar or concussion follows. The very reverse of this, however, happens every time the foot of a limb having a short, upright pastern, comes to the ground. In such, instead of the weight descending obliquely upon the *sessamoids*, (two small bones at the posterior and inferior part of the fetlock joint,) and the fetlock bending therewith, it depends directly, or nearly so, upon the pastern, making this bone entirely dependent on one beneath it—the coronet—for counteracting concussion; and should any thing occur to diminish this, or to throw more weight on the bones beneath than they can counteract, jar of the whole apparatus ensues; and an effort of nature to strengthen the parts, by investing them with *callus* and ossification, is likely to be the ultimate result. *For we would view ringbone, disease though it must assuredly be called, as frequently, in young horses, a recourse of nature to strengthen weak parts—the bones being unequal to the exertions or efforts required of them.*"

To the last sentence of this quotation we wish to call special attention. It is worthy of being written in letters of gold, as an exemplification of a grand general principle that pervades all the works of animated nature.

Most of the so-called diseases that horse and cattle doctors amuse themselves by curing, are only *symptoms*—mere steps by which nature is restoring or attempting to restore a diseased part. Thus, a boil is nothing but an operation by which a little piece of dead flesh, called the core, is separated and expelled from the living flesh that surrounds it; a felon is the opening of a passage through the thick tendonous sheaths of the fingers, for a like purpose. Again we say, disease is not a *thing*, it is a *process*.

We have seen ringbones treated in many different ways, yet with no more benefit than arises from the relief of internal inflammation by counter irritation. From what is stated above, it follows that, if the animal be young, it should be better fed; should not be incited to any undue exertion; that an irritating liniment, or even a blister, should be applied to the foot for the relief of the joint, and that, after the disease has existed for some time and the joint has become stiff, all treatment must prove unavailing, and it should be let alone.—*Am. Agriculturist.*

"Behind Time."

A railroad train was rushing along at almost lightning speed. A curve was just ahead, beyond which was a station at which the cars usually passed each other. The conductor was late—so late that the period during which the down train was to wait had nearly elapsed—but he hoped yet to pass the curve safely. Suddenly a locomotive dashed into sight right ahead. In an instant there was a collision. A shriek, a shock, and fifty souls were in eternity. And all because an engineer was *behind time.*

A great battle was being fought. Column after column had been precipitated, for eight mortal hours, on the enemy posted along the ridge of a hill. The summer sun was sinking to the west, reinforcements for the obstinate defenders were already in sight, it was necessary to carry the position with one final charge, or everything would be lost. A powerful corps had been summoned from across the country, and if it came up in season all would yet be right. The great conqueror, confident in its arrival, formed his reserve into an attacking column, and led them down the hill. The whole world knows the result. Grouchy failed to appear. The imperial guard was beaten back. Waterloo was lost. Napoleon died a prisoner at St. Helena because one of his marshals was *behind time.*

A leading firm in commercial circles had long struggled against bankruptcy. As it had enormous assets in California, it expected remittances by a certain day, and if the sums promised arrived, its credit, its honor, and its future prosperity would be preserved. But, week after week elapsed without bringing the gold. At last came the fatal day on which the firm had bills maturing to an enormous amount. The steamer was telegraphed at day-break—but it was found, on inquiry, that she brought no funds; and the house failed. The next arrival brought nearly half a million to the insolvents, but it was too late—they were ruined, because their agent, in remitting, had been *behind time.*

It is continually so in life. The best laid plans, the most important affairs, the fortune of individuals, the weal of nations, honor, happiness, life itself, are daily sacrificed because somebody is "behind time." There are men who always fail in whatever they undertake, simply because they are "behind time." The allies have lost nearly a year at Sebastopol, because they delayed a superfluous day after the battle of Alma, and come up too late for a *coup de main*, just twenty four hours "behind time." Five minutes in a crisis is worth years. It is but a little period, yet it has often saved a fortune, or redeemed a people. If there is one virtue that should be cultivated more than another, by him who would succeed in life, it is punctuality; if there is one error that should be avoided, it is being *behind time.*

Ashes and Plaster.

A subscriber says:—"I wish to know if there is anything in the nature of ashes or plaster, that causes them to neutralize each other, when used together? My neighbor says, he knows it is so, and that I shall lose my money and my labor."

REMARKS.—Plaster is sulphate of lime. In the state of ground plaster, as generally used in this country, it consists of 28 lbs. of lime to 40 lbs. of sulphuric acid, and 18 lbs. of water.

Ashes are made up largely of silicates, mostly insoluble. They contain also carbonates of the alkalis, potash and soda, and of the alkaline earths, lime and magnesia, together with a little of various phosphates, a little sulphate of lime (plaster), a little soluble silica, and small portions of free alkali.

In answer to the above question, science would say, "No; the two cannot neutralize each other; no decomposition will be effected by mingling them in the soil; and so far as the free alkali of the ashes might tend to dissipate the ammonia of the soil, the plaster would counteract that tendency, and so the effect of mixing them would be beneficial rather than otherwise."

If we propound the same question to practical farmers, we get contradictory answers. One says he gets good results from both ashes and plaster applied separately, but not equally good, if they are mixed. Another says, it is less labor to apply them together, and the results are quite as good. Both *know* that they are right; and the scientific man would be apt to think that he *knows* that the last only is right. We incline strongly to the opinion that ashes and plaster may be used *together* with no injury to each other, but with perhaps some little advantage over their *separate* use; though it must be confessed that there are strong testimonies to the contrary coming from practical farmers.

Let the experiment be thoroughly tried. On part of a field apply the ashes and plaster in the hill before planting. On another part, the soil being the same and similarly treated in other respects, let the ashes be applied in the hill at planting, and the plaster be applied after the first hoeing. If the ground were peculiarly warm, it might be well to try

a third portion by sowing the ashes broadcast, and applying the plaster to the hill. Our expectation would be that little or no difference would appear, except that where the ashes were sown broadcast, the crop might not be quite as forward early in the season, but later would quite equal the other.

We are the farthest possible from wishing that the practical farmer should bow to the opinions of any one. If agricultural writers and agricultural workers will maintain a little wholesome watchfulness and a great deal of kindly respect for each other, the best interests of agriculture will be advanced.—*Nash's Farmer.*

Nitrogen for Plants.

The experiments of M. Boussingault showed pretty clearly that plants acquire nitrogen in some form from the air; but they did not determine whether it was the atmospheric nitrogen gas, or whether it was derived from the ammonia—this blank, adds Professor Way, M. Ville endeavored to fill up in our knowledge of the processes of vegetation. He employed hermetically closed glass cases, and in these he operated upon cress, lupines, rape, wheat, rye and Indian corn; the result of these carefully conducted experiments was that the crops in most cases contained considerably more nitrogen than that present in their seeds, and (as ammonia) in the air supplied to them. He thus arrived at the conclusion that plants assimilate the atmospheric nitrogen. In a subsequent series of experiments, M. Ville adopted measures to deprive the air, before entering the cases, of all the ammonia which it contained, so that any gain in nitrogen of the produce over that of the seeds could not be traced to the agency of ammonia. The result was the same as before: the gain of nitrogen was undoubted. The truth or otherwise of these deeply interesting enquiries, however, need not divert us from the important practical facts which they serve to illustrate; since, whichever way nitrogen is assimilated by plants, the rapidity of that assimilation is, we are well assured, promoted by the increased freedom with which the atmospheric air circulates through the soil, and by the depth to which it freely penetrates.—*Mark Lane Express.*

The Boston Veterinary Institute.

The importance of an institution which should be able to disseminate sound instruction on the subject of veterinary medicine, and supply the community with a class of competent veterinary surgeons, will be at once acknowledged, when it is remembered to how great a degree we are dependent upon domesticated animals for our pleasure, our support and our wealth. Like the human species, they are subject to a very great variety of maladies which can only be efficiently controlled or relieved by a thorough acquaintance with their anatomy, physiology, pathology, and hygeine, and with the remedies best adapted to the cure of their diseases. The amount of ignorance which prevails, in this country at least, upon the subject, is very great, and yet it is but little appreciated even by those who are most likely to suffer from it. The most valuable animals, when sick, are frequently confided to the care of horse-doctors and cattle-doctors who are as ignorant of the principles of veterinary medicine as they are rash and unskillful in its practice. With a few exceptions, this class of practitioners, with us, have had no regular education to qualify them for the exercise of a profession which requires in some respects more knowledge, as well as a higher sagacity, than is called for in the treatment of the human patient; for the physician is deprived of a most important source of information, both in the detection of symptoms, and in the effect of remedies, from the incapacity of the sufferer to describe his own sensations.

Incompetent, as too many of our veterinary surgeons are, we believe that even in its depressed condition among us, the profession yields a handsome return to those engaged in its practice, and there is no doubt that surgeons, properly qualified by a regular course of study at some institution of known reputation, would find a rich field for the exercise of their art in our community, where valuable animals are often sacrificed, either in consequence of the ignorance of the doctor, or from the skepticism of the owner, who in despair refuses all medical interference. The profession has hitherto been looked upon as rather beneath the notice of an educated and cultivated man; though upon what grounds we are at a loss to conceive. In order to become accomplished in it, one must spend years in patient study, in attendance on lectures and clinical instruction, and in dissection. He should be familiar to some extent, at least, with all the different branches which are required for the ordinary practitioner of medicine and surgery; and an acquaintance with those departments of science which have no immediate bearing upon veterinary medicine, will tend indirectly, by promoting habits of observation and investigation, to qualify him for the study and treatment of the maladies of the brute creation. In England and France there are several schools for instruction in this branch of knowledge, which offer every advantage that can be desired. That at Alfort, near Paris, has long been celebrated. It contains about three hundred students, and the course of study, which exceeds through four years, embraces lectures on anatomy, chemistry, botany, materia medica and pharmacy, veterinary surgery, with operations and the practice of medicine as applied to animals. The use of the forge is also taught.

We are glad to see that there is a prospect that this subject will receive among us that attention which it has so long needed. In May last, an act of the Legislature was passed, incorporating the "Boston Veterinary Institute," the object of which is to afford ample instruction to persons desirous of qualifying themselves for the practice of veterinary medicine and surgery. The plan of instruction includes lectures on the Anatomy and Physiology of the Horse, on Theory and Practice of Veterinary Medicine and Surgery, and on Cattle Pathology. Students will also be allowed to attend the lectures on Chemistry and Pathological Anatomy in the medical department of Harvard University, and Clinical Lectures will be given by the Faculty.

The officers of the Institute consist of the following gentlemen:—D. D. Slade, M. D., President; George H. Dadd, Professor of Anatomy and Physiology; Charles M. Wood, Prof. of Theory and Practice; Robert Wood, Prof. of Cattle Pathology. D. D. Slade, M. D., John W. Warren, M. D., George Bartlett, M. D., and Charles Gordon, M. D., Board of Examiners.

We hope that this effort in behalf of a noble and useful purpose, will meet with a corresponding encouragement from the community. Without assistance at this early period of its organization, the School will not be able to sustain itself. All who own horses or stock, should contribute something towards an enterprise which will be a benefit to them. It is hoped that the next legislature will make the Institution a handsome grant. When money is so freely lavished on botanic colleges and female medical schools, it surely ought not to be withheld from an object whose practical utility will, we presume, be questioned by no one.—*Medical and Surgical Journal.*

Using Sprouted Wheat.

In some parts of the country the wheat crop was badly sprouted this serson. An observing gentlemen travelling in Western New York sets down the damage in that region at

17 per cent. In Northern Ohio the damage may vary in different localities from 5 to 10 per cent. In Northern Missouri where the crop was very heavy, the *Council Bluffs Bugle*, says:

"Rain began to fall copiously about the commencement of harvest and continued to such an extent that even the wheat in shock, became one verdant mass of growing wheat. Over three fourths the entire crop has been in this way totally destroyed, and that too, as far south as we have heard from. This will be a heavy calamity upon the region thus suffering as there will not be wheat enough to supply the country with flour."

In Michigan too we learn the wheat is badly grown in many places.

Now, how is the farmer and the farmer's wife to remedy this damage? In the Spring of 1836, nineteen years ago, we moved to Ohio and pitched our tent among the Ashtabulas (God forgive us!) and that part of the country was full of grown wheat. Our best of wives, was a most exemplary housekeeper, and this grown wheat was a sore experience, coming as we did from the orthodox rye and Indian of Vermont. We (that is, she) tried every plan that female ingenuity could invent, including the inventions of all the neighbors, and after all came to the conclusion, that, like ring bone or heaves, the thing was about impossible to cure.

But it admitted of amelioration. Baking powders were not in vogue then, probably they will prove the best ameliorant; we found that quick made cakes, "hurried up" with saleratus, were less liable to run than raised bread. But we have constitutional objections to hot cakes, despite their going off, and much prefer a ripe loaf of raised bread. Of all our experience we had the best luck by pursuing a practice like the following:

Take a pan of flour and place it before the fire or under the stove and let it season for six or eight hours, keeping it pretty hot to evaporate the moisture as much as possible. Then make up the sponge in the usual way. It will get lively and begin to spread itself; then knead it down as hard as possible, work in all the flour you can, and then work in a little more! A little *shortening* and a little alum water, put in at the commencement of the kneading, will help to hold the dough from running, when set to bake. The loaves must stand in the oven longer than for good flour, or the inside will be clammy.

For Seed, it is confidently reported by a reliable gentleman who has tried it, that grown wheat will still vegetate with scarcely any perceptible loss in quantity or luxuriance.

"Pruning when the Leaves are On."

The only pruning we hold to be sound, safe and commendable, at this season, is that of the *finger and thumb*,—in other words, *pinching*. It is quite inconsistent with good management to rear a crop of good shoots at two or three inches growth before they attain to woodliness. This economizes the force of the tree, and turns it into a channel where it will promote instead of frustrating the ends we are aiming at. For instance, if we plant a young tree, and have trimmed it with a view to a certain form, and, contrary to our expectations, a shoot breaks out at an unexpected point, and assumes a vigorous habit, and robs all other parts, it would be evidently unwise to tolerate the intruder until it arrives at full growth, and then cut it away. Too many trees are thus managed, by the neglect of summer pruning or pinching. We admit, however, that there are cases in which the summer pruning, or entire lopping off or cutting of considerable size, may be judicious and safe. For instance, in the case of neglected orchard trees, in a luxuriant state, with dense heads, in which the fruit is deprived of air and light. In such cases, branches may be thinned out and cut; the surface heals even more rapidly and smoothly than at any other time. But it is unsafe to produce any very sensible diminution of foliage, as it arrests the growth of the tree.

All pruning in the growing season tends to arrest growth. Nurserymen know that a slight pruning of stocks before budding will so arrest growth as to make the bark adhere firmly; when, before the pruning, it lifted freely. It is only on this principle that most all pruning to promote fruitfulness, must be done at a point of greater or less activity of growth. Late spring pruning is often resorted to as a means of subduing a superabundant vigor, and it has the same effect as root pruning to a certain extent.—*Horticulturist.*

Preservation of Fruit, &c.

MR. GREELY, in a recent letter to the New York Tribune, on the Paris exhibition, speaking of an invention by M. Masson, for the preservation of all descriptions of fruit and vegetables says:

The process consists mainly, I am informed, in the slow and complete evaporation of the water contained in the esculents to be preserved, by means of a series of ovens, in which they are subjected first to a very gentle, afterward to a higher, but still moderate warmth, until the last particle of moisture has exhaled. The dried residuum is now simply packed in papers, (not air-tight cans,) where it may remain for years under any skies, subjected to any sudden alteration of temperature, and when opened requires only to be soaked in water to restore it to its original state. I see no reason why fruits may not in time be operated on with like success, and thus peaches, grapes, strawberries, pine-apples, &c., be enjoyed not merely at all seasons but in all climates, and a whaler frozen up in Lancaster Sound make his Christmas dinner of turtle soup, roast (fresh) beef, green peas, cucumbers, apricots, bananas, muskmelons, and all the delicacies of New York or Paris of every season. This process, I learn, has now been several years in use, until its success on the largest scale is no longer a question. I presume it has ere this been transplanted to the United States; if not, it speedily should be. It is of far more consequence to mankind than the fate of Sebastopol.

Pears on Quince Stocks,

In corroboration of some of the ideas embraced in an article on this subject in our last, we will mention a few facts just brought to our attention in a call at the garden of Dr. James A. Stetson, of Quincy. Dr. S. has the Flemish Beauty, Glout Morceau, Urbansite, Dunmore, Duchesse D'Angouleme, Vicar of Winkfield, and other varieties on the quince, in a bearing state, and in the most perfect condition. The amount of fruit on some of the trees, considering its size and quality, is astonishing—the branches in almost every case requiring support. Poles are set round the trees, towards the extremities of the branches, and the different sets of branches are fastened to the poles nearly in a natural position. On a tree of the Flemish Beauty we counted on a branch not more than three-fourths of an inch in diameter, and in a length less than two feet, *ten* pears, estimated to weigh ten ounces each! In other parts of the tree they hung by fours and sixes, of equal size.

The soil where these trees stand is rather dry, other subsoil quite gravelly. Dr. Stetson mulches the ground pretty heavily with seaweed, and in very dry weather applies a barrel of water, from a cistern, to each tree, once in three or four days. He concurs with other observing cultivators in

thinking that the union of the stock and graft (where the quince is used), should be below the surface of the ground. Under this treatment, the trees present at this time a luxuriance and freshness of foliage, and a smoothness and roundness of wood, really beautiful to look upon.

Baked Beets.

A good housewife assures us that the mode of cooking beets herein described, is preferable to all others:—

"Beet root cannot be too much recommended to the notice of mankind, as a cheap and salubrious substitute for the now failing and diseased potato. Hitherto the red kind has been only used in England as a pickle, or a garnish for salad; even the few who dress it, generally boil it, by which process the rich saccharine juice is lost, and the root consequently rendered less nutricious by the quantity of water it imbibes, as well as by parting with the native syrup, of which it is thus forcibly deprived; it is, therefore, strongly recommended to bake instead of boiling them, when they will be found to afford a delicious and wholesome food. This is not an untried novelty, for both red and white beet root are extensively used on the continent; in Italy, particularly, they are carried about hot from the oven twice a day, and sold publicly in the streets; thus they are purchased by all classes of people, and give to thousands with bread, salt, pepper and butter, a satisfactory meal. There are few purposes for which baked, or even roasted or fried beet root, would not be found preferable to boiled."—*Ag. Exchange.*

Action of Lime.

At a Weekly Council of the Royal Agricultural Society, Professor Way delivered before the members a lecture on the result of a nine months' investigation into the condition under which lime affects the absorbtive powers of soils in reference to ammonia. These results were numerically represented in a small table, containing only four vertical columns, intersected by as many horizontal spaces; but would prove, as Professor Way remarked, of a permanent value, worth all the time and labor bestowed upon their production, if they should be found to lead to the establishment of any new principle in agriculture. His lecture was chiefly occupied in the discussion of those results, and of the clue they might possibly give to explanations of the mode in which lime acted upon soils as a manure. The two principal facts ascertained by these experiments appeared to be the following: 1. That all clay soils, more or less, even beyond the depth of twenty feet, are found to possess a certain quantity of ammonia, derived, as Professor Way supposes from the fishy and vegetable matter of beds of lakes or rivers, no bed of clay whatever, he thought, being entirely free from ammonia. 2. That the addition of lime to a soil set free one-half the ammonia it contained; thus acting, in the first instance, as a "stimulant" to vegetation, but as an exhauster of the stock of ammonia already in the soil or to be slowly derived from the atmosphere, if applied in large quantities. The two principal recommendations were,—1. That liming should take place periodically at short intervals, not more than eight to ten bushels per acre being used every year, or every two years: lime would, under such circumstances, he thought, be found to be one of the most useful adjuncts of the farm. 2. That lime when slaked and mixed with water, forming what was known as "milk lime," should be added to tank-water, and distributed by means of piping, as in the case of Mr. Mechi's operations at Tiptree or Mr. Kennedy's at Myre Mill. Professor Way, in the course of this lecture, entered into most interesting details connected with the chemical machinery of the double silicates in the soil, by which the action of lime was regulated; and with the experiments he had instituted for showing, in strong comparative contrasts, the results he had obtained. He also pointed out the great importance of giving to land, by means of suitable cultivation, that condition under which it would best act as an absorbent of ammonia from the atmosphere. He has drawn up a complete statement of these details, which will be submitted in due course to the members.

Staggers in Sheep.

Formerly I lost sheep by this disease, until by experiment I discovered a remedy, which has not failed me for many years, and I think it a safe as well as a sure remedy. About twelve years since I found that a nice ewe of mine, which had two fine lambs, was affected with this disease. She was down by the fence, at the side of the pasture, and when she endeavored to walk or run, would stagger and fall, and appeared to be blind. I went to her, took my knife out, cut off an ear close to the head, and to my surprise found the blood did not start; not so much as one drop could I obtain. Thinking my sheep as good as dead, I concluded to try experiments upon her. I returned to my dwelling, and taking a bottle of spirits of turpentine in my hand, went again to the pasture. I had been absent perhaps an hour, but the sheep had not moved from where I left her, and there was no discharge of blood from the ear. I poured perhaps twenty drops of turpentine into one ear; and after waiting a few minutes, I turned her over and poured the same quantity into the other. She soon began to shake her head, and a stream of blood ran from her amputated ear. In an hour she was apparently as well as ever. Since then I have used the same remedy, without cutting off the ear, and have never lost a sheep by the staggers.—*Rural New Yorker.*

The Apple Borer.

Last autumn, Mr. David Thomas, of Union Springs, New York, came into possession of a young orchard of about a dozen trees, each four or five inches in diameter. They had been much neglected, and were so infested with borers that he thinks not one of them would have survived a year without prompt attention. The presence of the borer is indicated by the orange-colored, sawdust like excretions thrown out from the holes near the surface of the ground, and the first thing was to find their entrance. This was in most cases easily accomplished by scraping all the pith thus thrown out away from the bark, and where necessary removing the earth away from the tree till the roots branch and separate from each other. As soon as the holes are found a flexible twig is thrust into it, worked up and down till it reaches the grub, which is at once known by the peculiar *crush* it occasions. A twig the eighth of an inch in diameter, and four or five inches long, is commonly quite sufficient. Sometimes the holes are larger and more tortuous, so that it may become necessary to cut away a portion of the bark to obtain access, in which case care is taken to cut longitudinally or lengthwise with the tree, so as to occasion as little injury as possible. It is necessary to pass round several times during the season in these examinations, as new holes will often become visible that were not at first discovered.

By this treatment all the trees we have mentioned have been restored to a sound healthy condition, with the exception of one that was so far gone that it could not be recovered.

When the trees are taken at an early period in the attack, the removal and destruction of the insects are very easy, as much so as that of the peach grub, the borer not immediately cutting deep into the wood of the tree.

No remedy by way of prevention has been found equal to

the application of urine about the roots—about a pint or less for small trees, and two or three quarts for quite large ones, the application being made once a fortnight.

Plant Fruit Trees.

Dean Swift once remarked, that any one who should cause a blade of grass to grow where nothing grew before, was a benefactor to mankind. The object of the author of this remark was to state in forcible terms his opinion of the public benefit derived from all agricultural improvements. This saying was figurative; but it might be literally averred that every man who plants a tree is a public benefactor, whether the value of the tree consists in its fruit, or its flowers, its timber, or even its shade; for, with regard to trees, it may be said that we often seek the substance for the sake of the shadow. We are acquainted with a single lady who makes the national boast, that she has always planted a fruit tree in every place she has resided. Whenever she takes lodgings in any new house, if there be a garden attached to it, she plants a fruit tree upon the spot. Such acts, upon her part, seem to be disinterested, as her habit of moving from place to place, must prevent her from being the continual proprietor of these trees. Some one is benefitted by them, and she enjoys the satisfaction of having done some good in the world. In these acts, she displays true benevolence.

We know of a gentleman who lived to see the folly of a different course of conduct. On moving his young family into a house which was connected to a large garden, he was advised to plant it with fruit trees. He rejected the advice, and not owning the place, replied that he should plant no trees for other people's benefit. He lived there about thirty years; and during this space of time he might have raised an abundance of fruit for his own family, and seen many of the trees of his own planting perish of old age. There is perhaps no species of selfishness so foolish as that which prevents one from planting trees; since their cost is but a trifle, and the labor of attending to a few individuals is both wholesome and agreeable. And in this country, where property is so constantly changing hands, we can never predict when we plant another man's grounds, that these grounds may not become our own or those of our children.—*Mass. Mag. of Horticulture.*

Importing Vegetables.

It is not a great many years since Connecticut used to supply the West India Islands with onions and other kinds of vegetables; but now the tide has turned, and a stream of vegetables is pouring in upon us from the West Indies and all other parts of the world. We are certainly getting to be great eaters. With the finest soil and the best climate in the world for all kinds of vegetable productions, we are importing from foreign countries the article that ought to be produced in our own gardens. Bermuda supplies us with early potatoes and tomatoes; and it seems that the British Provinces to the East of us are supplying us with eggs, which are now imported duty free under the Reciprocity treaty. Twelve hundred and sixty dozen of Nova Scotia eggs were entered at the Custom House in Boston on one day this week. We import enormous quantities of dried prunes from France, a kind of fruit that grows abundantly in all of our Eastern and Middle States; we import figs from Smyrna, which might as well be grown in North Carolina; grapes from Spain, which can be raised in Virginia; nuts from Madeira, which may be raised in New York; and olives, which might be produced in abundance in nearly all the Southern States. As for eggs, the value of which is so much greater when they can be warranted fresh, we should hardly think that it could be profitable to import them from abroad. Peaches we are able to raise in as great quantities as we can consume; but we shall not next be surprised to hear of a cargo of this delicious fruit being imported from some neighboring country. Potatoes are brought to us from France, Germany and England, and a cargo of turnips was lately brought to us from Scotland. It is about time that we had begun to develop our agricultural resources.—*N. Y. Times.*

Breaking Colts to Bits and Harness.

Much may be done with young horses in the way of cultivating their good manners, and forwarding their education —or breaking, as it is usually termed—before the aid of the colt-breaker is required. Foals should be accustomed to familiarities, fondling, and kind usage, from their birth; and if that kind treatment be continued as they grow up, they will occasion very little trouble when the time arrives for them to be broken. Before that operation is commenced, it is desirable that a bit should be placed in the young animal's mouth. Any plain snaffle of sufficient substance answers the purpose. There should not be any reins attached to it; it should be merely suspended by the head-piece.

The Colt will thus learn to play with the bit, which will tend very materially to the establishment of a good mouth, care being observed that the bit is suspended evenly by the proper length of the head-piece. This may be adjusted by any quiet, good tempered person, to whose care the young creature is entrusted; and may be left on from one to two hours daily. A loose box, hovel, or small yard, is the most suitable place for the purpose.

It is a very bad custom, though a very prevalent one, when a young horse is first bitted, to make use of reins, which are drawn tightly. A colt-breaker, when employed, should therefore be cautioned against it, for it will cause the pupil to contract a habit of leaning on the bit, and probably create a one-sided mouth. By such treatment, many colts will take a position in one corner of the box or hovel, and there stand and sulk; whereas if the bit be used as I have recommended, they will champ and play with it freely thereby producing that sensibility of mouth which is essential to future perfection.

Breaking to harness may be considered necessary with such horses as are adapted for carriages; and their services after they are three years old may be advantageously called in requisition on the farm. Their first introduction should never be to a noisy heavy cart. The plan which I have adopted, with invariable success, has been to put the harness on so that the animal may become quite familiar to it in the stable, after which I have a cord attached to each trace. The horse is then led out by an assistant, and another man, with the cords in his hands, offers a slight resistance, as the animal moves forward; by this initiation the alarm frequently occasioned by the pressure of the collar against the shoulders is avoided, as the man who holds the cords can instantly relax them, if necessary. After two or three lessons of this kind, neither trouble nor danger need be apprehended in putting the animal to any employment calculated for the advancement of his education in the art of drawing. Cecil.

—*London Farmer's Mag.*

The Eye.

Our sight is the most perfect and most delightful of our senses. It fills the mind with the largest variety of ideas, converses with its objects at the greatest distance, and continues the longest in action without being tired or satiated with its proper enjoyments.

PENNSYLVANIA FARM JOURNAL.

VOLUME 5. PHILADELPHIA, NOVEMBER, 1855. NUMBER 11.

We wish to apologise to our readers for the lateness of the two issues made by us since assuming the publication of the Journal. We had heard dissatisfaction on this account expressed before, and entered upon our duties determined to have it otherwise. But, to our surprise, we found obstacles in the way of a speedy progression of our work which we had not expected, and which we found had for months been hanging like a dead weight upon the efforts of our predecessors. But we are happy in being able to assure our friends that these difficulties have been nearly all removed, and that we can now promise them, with a degree of confidence, greater punctuality hereafter. THE PUBLISHERS.

Agricultural Exhibitions.

Many of our County Exhibitions the present season, and the State one at Harrisburg may be included, have not come up to the expected standard, either in a financial point of view, or the number and variety of contributions. There has been an evident falling off, in a general way, from last year, the *cause* of which should be examined. No one can question the advantage to the farming community, in many respects, of these annual gatherings. Farmers having their business and residences often many miles apart have not the same conveniences as merchants, manufacturers, or mechanics, for frequent intercourse and transaction of business. They have no common place of meeting or change. Hence agricultural exhibitions are useful in bringing them together, enabling them to see and compare, from year to year, the improvements in stock, implements, new seeds or productions, &c., and if they are firmly established on a permanent and suitable basis, there can be but little doubt they will exercise a very beneficial influence on agriculture. We dislike, however, to see them languish or drag heavily along, to see them barely paying expenses, and to do this at all making it necessary for the recipients of premiums, paltry as they often are, to *relinquish* them for the "*good*" of the Society, and to have such persons held up as *examples* of patriotism for others to imitate. We have regretted there should ever be a necessity for this, and also that to keep up an interest or excitement and draw a crowd, it has been thought advisable or necessary to introduce the *race course* as a regular feature of the occasion; also equestrianism by ladies, baby shows, as has been done in Ohio, and other additions *a la Barnum*. From what we have seen outside as well as inside of the grounds the present season, we fear these agricultural festivals are rapidly losing their original character and design, and degenerating into occasions for dissipation, horse racing, intemperance, &c., and that we shall ere long have them accompanied from county to county by menagerie exhibitions, circus riding, jugglers, infant drummers, &c., *et id omne genus.*

No one can fail to perceive that more attention is given already to the *course* than to an examination of the improved stock, vegetable productions, or new implements. The question of who has raised the best crop and variety of wheat or corn, exhibited the best specimens of cattle, sheep or swine, is not thought so important as who has the *fastest horse.*

It seems to us the entering wedge is already made for these exhibitions to change their character, and that it is well worthy considering how they can be maintained on their original intention. Must they be repeated at less frequent intervals, must they lose their original character, or had they better be abandoned?

We recollect being present, some years ago, when Nicholas Biddle, at the close of a capital agricultural address, remarked that the world was governed by three boxes—the cartridge box, the ballot box, and the band box, *force*, *reason* and *affection*. We thought at the time one kind of box was omitted—*the money box*. Despicable as money may be *in the abstract*, still, in these fast times, it is the Archimidean lever which moves the world, builds churches, school houses, rail roads, makes peace and war, gives energy to every effort, is the *aim* of all human pursuit, buys Durham stock, reaping machines, and we say it in a whisper, hoping no one will repeat it, *even controls elections*. People generally will not work now for philanthropy or patriotism solely, but for their pecuniary advantage; and we believe that unless some advantage results pecuniarily to exhibitors from these annual displays, they will not continue their contributions, and the exhibitions themselves consequently drop. Believing they have been and may be highly useful, this to us would be a matter of great regret. Our idea is, that in any section where an agricultural society *flourishes*, there will be enough public spirit to raise a permanent fund by donation or liberal subscriptions, the *income* of which should be appropriated, as one object at least, to sustain the character of the annual exhibitions, and *especially* to increase the *amount of premiums*. Make these large enough to answer the object of *remuneration*, and thus excite competition. This is the design and

meaning of a *premium*, which should indicate *reward* for excellence or success in any department, but in nine cases out of ten, to the recipient it now involves a real loss. Take, for instance, a premium offered for a display of vegetables, which varies from two to five dollars at the outside in most county societies' schedules. They are raised with considerable expense of extra labor and manure, and would bring eight or ten dollars in *market*, but remain at the exhibition for two or three days until they become worthless. What advantage is a premium to such an exhibitor? or a diploma. So with a fine cow which the owner may drive from five to fifteen miles, and run the risk of a two or three dollar premium or diploma. We have had cows which did not recover from the change of keep, fatigue of the journey, &c., for several weeks, and fell off in their yield of butter two or three pounds per week in consequence. We never could calculate that the two or three dollar premium was a *compensation*, but that we were an actual sufferer by the operation. The same reasoning may be applied to almost any articles usually exhibited. The premiums are not generally large enough to *pay*. This appears to us the great secret, and unless there is some method to make them more worthy of serious effort and competition, we fear many of our old county societies will be unable to continue the interest in them by the public.

Cannot the same plan be pursued as with many of our institutions of learning, which, by endowment, bequest, or donation, have a permanent fund for their support independent of their regular receipts. Several farms have been recently offered for the Farmers' High School of Pennsylvania; cannot the same public *spirit* be directed to the permanent establishment of our county agricultural societies? In England premiums are made large enough to be highly and directly *remunerative*. They are made worth striving for, and this is the key to their success. Ten, twenty, fifty, or one hundred dollars, for a good animal, a fine crop, a valuable implement, is *an object*. Premiums there deserve their name, and if they could be made to partake of the same character here, we should find no necessity for bringing in extrinsic objects to attract attention and draw a crowd.

At the late exhibition of the United States Agricultural Society at Boston, a fund was raised of $20,000 for the occasion. Every one knew beforehand this was equal to an insurance of success.

For the Farm Journal.

Poplar for Pump Stocks.

MR. EDITOR:—It is a fact perhaps not generally known, that poplar is not a suitable wood for pump stocks. From its white and cleanly appearance, and its tendency to grow tall and straight, it is liable to be selected for that purpose; but, in one or two cases in which I have seen it tried, it did not answer by any means. The first was one put in by MORDECAI LARKIN, of East Brandywine, Chester county, Pa. Soon after it was in, the water began to have a very disagreeable smell, and continued to grow worse until it was entirely unfit for use, and finally the stock had to be removed One made of white oak was then substituted, and without any cleaning of the well or other change, (except that the poplar one had a copper tube for the bucket to work in, which was not inserted in the other,) the water in a short time was fit for all kinds of use. The other was one put in by Mr. WATERS, of Harford county, Md. It was still in when I saw it, but the water was very offensive, and the probabilities are that he has had it removed ere this. The cause of it spoiling the water in this manner, I leave for those better versed in chemistry to decide. J. L.

East Brandywine, Chester co., Pa.

For the Farm Journal.

Agricultural Botany.

BY HARLAND COULTAS, PROFESSOR OF BOTANY IN THE "WAGNER FREE INSTITUTE OF SCIENCE."

NO. 3.

THE DEVELOPMENT OF BUDS AND BRANCHES.—Before their expansion, the leaves of plants, together with the branches on which they are borne, are enclosed in a particular organ called a bud. All branches begin and terminate in a bud. A bud is, therefore, clearly an undeveloped branch.

The bud, or undeveloped branch or stem, is made up of a succession of leaf-bearing points, called botanically nodes (*nodus*, a knot). They are so named because these parts of the stem are internally more solid and compact than the other parts, in consequence of the vertical fibres of the stem being interwoven with those which are sent off horizontally into the leaf. These nodes are very conspicuous in the bamboo, Indian corn, and all plants with hollow stems,—the grasses for instance,—which on examination will be found solid at these points. The naked interval of stem between the nodes are termed internodes.

Now the formation of buds is the natural result of the cessation of the growth of the internodes and the partial development of leaves at the nodes. That the scale of buds are leaves in an imperfectly formed or rudimentary state is evident from the fact that they are the last leaves of the season, and developed at a period when the vital powers of plants are becoming torpid and the sap is ceasing to flow. Buds are formed usually towards autumn, before the leaves fall from the trees, in the axilla of the leaves, that is in the angle formed by the leaf-stalk and the stem. Examine the branch of any tree before it has cast its leaves, and you will find at the base of the peticle or leaf-stalk the buds for the ensuing year. Hence in winter, after the leaves have fallen, these buds remain attached to the branches.

Buds contain in their interior, in an embryonic condition, the whole plan of the next year's growth, the nodes and even the leaves of the future stem. On the approach of winter the vegetable machinery stops, but there is no disarrangement of its parts, on the contrary all is ready in the bud and awaiting the stimulus of the returning light and heat.

Linnæus called buds the hybernaculum or winter's residence of branches, and the term is very appropriate as it admirably expresses the design for which buds are formed. The scales which envelop the bud are clearly designed to protect the embryonic branch and leaves which they enclose against the humidity and cold of winter. This is evident from their texture and peculiar appearance in different plants. In the willow and mag-

nolia, the bud scales are thick and downy; and in the horse chestnut and balsam poplar, they are covered externally with a plentiful exudation of gummy resin and thickly clothed internally with a woolly substance. By this beautiful provision both wet and cold are effectually excluded.

On the approach of spring, the resinous exudation is melted off by the heat of the sun, the leaf buds throw off their scales, and the leaves which were at first all crowded and closely packed together in the bud, become separated from each other by the elongation of their axis of growth, on the formation between them of internodes or naked intervals of stem, much in the same manner as the joints of a telescope are drawn out one after another.

Now it is the growth of the terminal bud which produces the elongation of the stem, whilst the development of the axillary buds produce the branches. But as the axillary buds necessarily follow the symmetrical arrangement of the leaves about the stem, it follows that there is a tendency to symmetry in the development of the branches. If the leaves be opposite for example, the branches will be opposite; if the leaves be alternate, the branches will be alternate, and so on. We find, however, that this is not the case, that the branches develope irregularly. The symmetry of their arrangement appears to be obscured and interfered with by the following causes.

Fig. 4.—A year's growth of a branch of the horse chestnut, crowned with a terminal bud; *a*, scars left by the bud scales of the previous year; *b*, leaf-scars, with round dots, showing the points of issue of the fasciculi or bundles of woody fibre, which formed the petiole; *c*, axillary buds, developed at the base of the petiole of the fallen leaves.

1. The non-development of some of the Axillary Buds.—As the primary plant is only called forth from seed by certain conditions of heat, light and moisture, favorable to its development, without which it remains latent in the seed, so the branches only protrude from axillary buds when circumstances are favorable, otherwise the buds remain latent on the stem, and no branches proceed from them. Now many of the buds in the axils of the leaves do not grow, because their growth is checked by the rapid growth of some few leading buds, which monopolise all the nutriment, leaving them only just sufficient to carry them forward with the increasing thickness of the stem, and to maintain their position on its surface, where they remain ready for action in case the growth of the buds is checked by untimely frost or other causes. It is generally the inferior buds which are thus kept in a rudimentary state of growth. The light does not get access to them so freely as to the buds towards the summit of the branches. The symmetrical arrangement of the branches is also prevented.

2. By the growth of adventitious or irregular buds, that is to say of buds which develope into branches in parts of the stem between the leaves, and not in their regular place in the axilla of the leaves. Sometimes, owing to the growth of the leading buds, the growth of some of the axillary buds is checked altogether. When this is the case they sink beneath the surface of the stem, and are buried beneath the succeeding layers of wood; but their vitality is not destroyed so long as they remain at a certain depth in the stem, that is to say in the alburnum or sap-wood. The trunks and branches of trees, therefore, always contain an immense number of these buried buds, and should some of the leading branches be broken off by high winds, then the current of sap which flowed to the dissevered branches goes to the buried buds, and starts them from a state of passive to one of active vitality. They now force their way through the wood to the surface, although that wood is the successive growth of years, breaking forth into branches. All must be familiar with the sight of willows and other trees, whose main branches have been accidentally broken off, and whose trunks have nevertheless been covered with young branches and shoots, the growth of buds which have been buried in their wood and for years dormant beneath their surface.

The practical farmer will now be able to understand the philosophy of pruning. When trees are trained against walls and other supports, certain leading shoots are cut, in order that the supply of sap they were monopolising may flow to certain lateral and latent buds, and cause their growth in the proper direction.

From these facts it is plain that plants, although exposed to frost and snow, and every storm that blows, are far from being destitute of a power of escape. How innumerable are the buds with which a tree is covered? How complete their protective apparatus against the winter's cold? We have seen that each bud which remains in union with the parent tree, if not developed, only awaits the destruction of its associates to enter the breach, repair the injury, and continue by its growth the battle of the living principle in the plant against the hostile forces of nature. Endowed with such powers of defence, a tree will grow and lift its majestic and massive stem for centuries to the air and light of heaven, and if, after thus long and bravely conflicting with nature, it should be finally prostrated by the power of the tempest, the reserved and buried buds of other years shall issue forth a new phalanx of defence, and renew successfully the struggle of the plant for life.

Premium Corn Crops for 1856

To those desirous of raising large crops of corn next season, we would say one important requisite is to have a *deep soil*, and that the fall of the year is the proper time for several reasons to make a beginning in this direction. Excepting on light ground, we greatly prefer fall to spring plowing. The teams are generally in better order, and more able for hard work. There is more leisure to plow carefully, and it greatly relieves the press of spring business. There is besides a positive advantage to the soil, particularly if heavy, or of a tenacious texture. The alternate freezing and thawing of the upturned surface, has a tendency to destroy its adhesiveness and make it more mellow; it also absorbs by exposure to atmospheric influences more freely the nutritive gasses floating about, the ammonia of heavy rains

and deep snows, and is actually improved in *quality*. Our advice is, use the Double Michigan Plow, let it go down twelve inches, bring up the yellow clay from its resting place of centuries, open it to the sun and air, and our word for it the corn crop of 1856, under such management, with other treatment as we shall take occasion to recommend in the coming spring, will be a very heavy and remunerating one.

Seedling Plums.

We have received from our friend WILSON DENNIS, of Bucks county, some specimens of a very fine seedling plum, called the Richland plum, which from its superior eating qualities, and his description of the tree, we should suppose worthy of general cultivation. He says its name is derived from the place where it originated, that the tree is a strong grower and great bearer, fruit seldom rots, is not subject to the black knots, and is generally free from the attacks of the curculio. It has been cultivated in his vicinity for about twenty years, and is preferred for the above reasons to most of the other varieties more generally known.

He also sent us specimens of Cornell's Fancy, Townsend, and Watermelon apples. The first is a Bucks county seedling, not unknown to many of our readers, and with the others are well worthy of cultivation. As friend DENNIS is a zealous cultivator of fine fruit himself, and desirous to disseminate good varieties, he offers to furnish scions of any of the above to any of the readers of the Farm Journal who will address him at Applebachsville, Bucks county, and enclose a stamp.

Pumpkins and Squashes.

There is hardly any class of vegetables in which there is so much confusion of names and varieties as pumpkins and squashes. They are particularly liable to sport and run into sub-varieties, and should consequently always be planted apart where it is desirable to retain them pure.

Professor HARRIS, of Cambridge, Mass., has given to these vegetables particular attention, and endeavored to arrange them with some definite classification, so as to more readily recognise the different species.

Our readers will recollect his interesting essay on this subject prepared for one of our former numbers. We have been permitted to copy below the following extract from a letter recently addressed by him to Dr. WILLIAM DARLINGTON, of West Chester, the result of further investigation, and which we take pleasure in transferring to our pages. He says:

"Botanists do not seem to be aware of the extent to which *Cucurbita maxima* varies (if such may be considered varieties), or, in other words, of the great number of forms pertaining to the group which is represented by the typical *C. maxima*. My recent importation of seeds of this typical species and some of its varieties has enabled me to compare the plants and their fruits in the growing state with such as were known and cultivated here. I find that all of them agree in having in common certain important characters, which seem to me to be of that fixed nature that pertain to species, how much soever they may differ otherwise, as to form, color, &c. Some of these characters have been entirely overlooked by all botanists, and this must account for my former doubts and scepticism, as to what was really the *Cucurbita maxima*.

"The typical *Cucurbita maxima* is an oblate spheroid, depressed at the poles, with meridional furrows (ten in number ordinarily), of a deep yellow color externally, orange colored within, and very hollow when ripe, and with about four double rows of seeds. The leaves cordate, entire, and obsoletely serrated. The limb of the corolla revolute, and the base wide. This is about all the botanists tell us of its specific characters. Add to these that the fruit stem is nearly cylindrical, more or less oblique, never deeply grooved or five angled, and never truly clavated, even when dry; and that the base of the stile is persistent, and takes the form of a nipple after the flower withers and falls off. It is astonishing that botanists should have entirely overlooked or neglected to describe the peculiarities of the fruit-stem and persistent stile. Moreover the seeds would never be mistaken for those of any other cucurbita by any careful observer, who had compared them with the seeds of those pumpkins and squashes which have clavated, angular, and furrowed fruit-stems.

There are at least twelve different kinds as to form and color, agreeing in the essential characters above noted, which are known to me, and which are to be referred to the group of which *C. Maxima* is the type. Some of these assume forms that are found in the group represented by *C. pepo*, but can always easily be distinguished therefrom by the characters, already specified, derived from the fruit-stem, stile, leaves, corolla, and seeds. Some of these kinds are vastly superior to all other pumpkins and squashes as articles of food; such are those called the "Autumnal Marrow" (a precocious and small variety of the Valparaiso pumpkin or squash), and the "Turban" or "Acorn squash," *Cucurbita piliformis*, Duchesne.

"The Lima cocoa-nut squash (pumpkin), the white bell cashaw,* and the striped cashaw or bell squash (pumpkin), both differing specifically from the common bell and crook-necked squashes of the Eastern States, are also very superior kinds, and would probably succeed admirably in the Middle and Southern States.

"The term *pumpkin* is somewhat indefinite, and is variously applied. In the Eastern States, this name is given almost exclusively to the roundish or spheroidal fruits, of a yellow or orange color, depressed at the poles, and having a clavated, deeply furrowed, and five ribbed fruit-stem. This belongs to the Linnæan species *C. pepo*, representing a group with many varieties as to form, color, &c., which might for distinction be termed *Pepous*—while to those in the other group, with a cylindrical fruit-stem, we might apply the name of *Potirons*."

To Preserve Sweet Potatoes.

As there is often very great difficulty in keeping sweet potatoes through the winter, it may be well to remind our readers of the precautions positively necessary to be observed at this season in storing them away. Like many other matters, there is no difficulty when the subject is well understood.

First, sweet potatoes should be gathered without being

* Giraumon a cornet de chasse.

hurt by frosts before digging. They should be handled carefully, placed in the barrels without rubbing the skins or bruising, the barrels should not be rolled about but placed on their ends, and finally should be kept in a dry, warm room where there is not the least danger of frost. A regular and even temperature of sixty-five to seventy-five degrees, which, of course, in cold weather, implies artificial heat, is required. By observing these precautions, we have not found it necessary to pack in the barrels sand, shavings, or any other substance. The barrels should be taken out to the potatoe patch, and the potatoes put immediately in as they are dug. This at least is our plan. The sand or dirt, which adheres to them, is some protection to their very thin and tender skins, and we would also advise not to rub off the small fibres, but to deposit them in the barrel with the least possible disturbance. It is a general practice for Jersey farmers, previous to bringing their sweet potatoes to market, to rub them off with a brush to make the skins look clean and smooth. This is an attraction to purchasers, but very undesirable if the intention is to keep them through the winter. In respect to varieties, it is the opinion of many that the kind of sweet potatoes which grow very long are not such good keepers as the shorter and thicker ones. This shape does not seem to be the effect of cultivation so much as some difference in the variety, at least this is the opinion of Jersey farmers with whom we have conversed.

For the Farm Journal.

Keeping Sweet Potatoes.

As the time is now at hand for laying in our winter supply of this excellent vegetable, allow me through your columns to give my experience with regard to their preservation. See that they are gathered when the weather and soil are dry, and having picked them with great care that none should get bruised, or any of the fibrous roots rubbed off, lay them for three or four days on a floor in some dry and airy exposure. Then procure some old flour barrels, and if the staves fit very closely, bore some inch holes, say twelve or fifteen in each barrel, that there may be a free circulation of air. Put some very dry shavings or leaves in the bottom, and having wrapped each potatoe separately in paper, place them carefully in the barrels one by one, and then store them in a room of a nearly uniform temperature of about 50°. Don't head the barrels up, but cover them with a loose board or piece of carpet. The above plan we have adopted now for several years with great success.

S. P. F.

Ultimate Benefits of Droughts and the Modes in which they act to improve Land.

It may be a consolation to those who have felt the influence of the late long and protracted dry weather, to know that droughts are one of the natural causes to restore the constituents of crops, and renovate cultivated soils. The diminution of the mineral matter of cultivated soils takes place from two causes :—

1. The quantity of mineral matter carried off in crops and not returned to the soil in manure.

2. The mineral matter carried off by rain-water to the sea, by means of fresh water streams.

These two causes, always in operation, and counteracted by nothing, would in time render the earth a barren waste, in which no verdure would quicken, and no solitary plant take root. A rational system of agriculture would obviate the first cause of sterility, by always restoring to the soil an equivalent for that which is taken off by the crops; but as this is not done in all cases, Providence has provided a way of its own to counteract the thriftlessness of man by instituting droughts at proper periods, to bring up from the deep parts of the earth food, on which plants might feed when rains should again fall. The manner in which droughts exercise their beneficial influence is as follows :—

During dry weather a continual evaporation of water takes place from the surface of the earth, which is not supplied by any from the clouds. The evaporation from the surface creates vacuum (so far as water is concerned) which is at once filled by the water rising up from the subsoil of the land; the water from the subsoil is replaced from the next strata below, and in this manner the circulation of water in the earth is the reverse to that which takes place in wet weather. This progress to the surface of the water in the earth manifests itself strikingly in the drying up of springs, and of rivers and streams which are supported by springs. It is not, however, only the water which is brought to the surface of the earth, but also all that which the water holds in solution. These substances are salts of lime and magnesia of potash and soda, and indeed whatever the subsoil or deep strata of the earth may contain.

The water on reaching the surface of the soil is evaporated, and leaves behind the mineral salts, which I will here enumerate, viz: Lime, as air-slacked lime; magnesia, as air-slacked magnesia; phosphate of lime, or bone earth; sulphate of lime, or plaster of Paris; carbonate of potash, and soda, with silicate of potash and soda, and also chloride of sodium or common salt: all indispensable to the growth and production of plants which are used for food. Pure rain-water, *as it falls*, would dissolve but a *very* small proportion of some of these substances, but when it becomes soaked into the earth, it there becomes strongly imbued with carbonic acid from the decomposition of vegetable matter in the soil, and thus acquires the property of readily dissolving minerals on which before it could have very little influence.

I was first led to the consideration of the above subjects by finding on re-examination of a soil which I analyzed three or four years ago, a larger quantity of a particular mineral substance than I at first found. As none had been applied in the meantime, the thing was difficult of explanation, until I remembered the late long and protracted drought. I then also remembered that in Zacatecas, and several other provinces of South America, soda was obtained from the bottom of ponds, which were dried in the dry, and again filled up in the rainy season. As the above explanation depended on the principles of natural philosophy, I at once instituted several experiments to prove its truth.

Into a glass cylinder was placed a small quantity of chloride of barium, in solution; this was then filled with a dry soil, and for a long time exposed to the direct rays of the sun on the surface. The soil on the surface of

the cylinder was now treated with sulphuric acid, and gave a copious precipitate of sulphate of baryta.

The experiment was varied by substituting chloride of lime, sulphate of soda, and carbonate of potash, for the chloride of barium, and on the proper re-agents being applied in every instance, the presence of those substances was detected in *large* quantities on the surface of the soil in the cylinder.

Here, then, was proof positive and direct, by plain experiments in chemistry and natural philosophy, of the agency, the ultimate, beneficial agency, of droughts.

We see, therefore, in this, that even those things which we look upon as evils, by Providence are made blessings in disguise, and that we should not murmur even when dry seasons afflict us, for they too are for our good. The early and the latter rain may produce at once abundant crops, but dry weather is also a beneficial dispensation of Providence in bringing to the surface food for future crops, which otherwise would be forever useless. Seasonable weather is good for the present, but droughts renew the store-houses of plants in the soil, and furnish an abundant supply of nutriment for future crops.

JAMES HIGGINS,
State Agricultural Chemist.

Strawberry Culture.

The following directions about the culture of strawberries, we copy from "PARDEE on the Strawberry," a work which should be in the hands of every cultivator of this delicious fruit:

SITUATION.—A warm, exposed, and yet rather moist location is the best for a strawberry plantation.

If very early fruit be an object, select a side-hill gently sloping towards the south, with a liberal admixture of small stones or coarse gravel in the soil. This should then be protected on the north, west and east by a high closed board fence, or a live hedge; we have seen an artificial hedge of withered evergreen boughs that answered an excellent purpose, and enabled the owner to realize fifty cents per quart for the crop, when otherwise he could not have so much anticipated the usual season, and would have been compelled to take twelve and a half cents for the same quantity.

If late fruit be desired, then select a piece of land facing the north, and exposed. Low land is usually preferable to high, hilly land for the strawberry, yet it can easily be raised on both; a little knowledge of its character will enable us to remedy the defects of the high ground. If the situation is near a spring of water, where it can be irrigated, and is also susceptible of drainage, it is very desirable.

Though they will sometimes succeed when partially shaded with trees or shrubbery, yet they are best flavored in an open garden, with no shade but their leaves. Alpines, and some other kinds, planted in the northern shade of a fence or dwelling, will commence later and continue longer in their bearing season.

SELECTION OF SOIL.—New land, recently disrobed of its forests, if of a deep gravelly loam, we think is the *best* adapted to the strawberry, and next, a sandy loam; but almost any soil, even the heaviest clay, can be prepared, by a liberal admixture of sand or gravel, so as to produce the finest fruit.

As has been intimated, as low moist soil as can be procured, consistently with depth and thorough drainage, is best adapted to the strawberry; and yet elevated knolls, and even sand-hills, with the precautions above named, have often succeeded well.

Wet, spongy lands, except with a porous subsoil susceptible of drainage; and high, barren hills, with a thin, flinty soil, are alike to be avoided.

The strawberry, however, is so retentive of life, that it will live in almost any soil; but it will not produce much fruit, unless the remedies are in some way applied to the ungenial soils.

PREPARATION OF THE SOIL.—Clear the ground of weeds, roots, and seeds of all kinds in preparation for thorough drainage, which in most soils should be attended to the first thing. The best drains are the earthen tile drains, from two to four rods apart, which should be so constructed as to be left open at both ends for the circulation of the air, as well as the release of stagnant water. A brush or coarse stone drain is beneficial as a temporary expedient.

After draining, break up the soil as deep as possible with a subsoil plough, or by trenching twenty inches or more deep. The strawberry is so sensitive to drought and stagnant water, that very little of the best land in our country can be exempt from draining and trenching, if we would receive in return uniformly large crops of fruit in all seasons.

Inasmuch as the fruit is composed of so large a proportion of potash, soda, and lime—sixty-two parts in every hundred—we recommend next, that an application to the acre be made of twenty to thirty bushels of unleached or leached ashes, ten to twelve bushels of lime—either stone or oystershell—with two to three bushels of salt, which should be thoroughly mixed with the soil, if possible, some weeks before the plants are set out. A liberal handling of the soil, thoroughly pulverizing it, before proceeding to the work of transplanting, is good economy.

MANURES.—On this point we are aware we shall differ widely from some of our ablest horticulturists, to whom we confess our inferiority in most things in the great science of horticulture; yet, in this we are confident that their own personal experiments, did their time permit, would lead them to the same results that we have deliberately arrived at.

And first, we would not use animal or barn-yard manures for the strawberry. We have eschewed their use entirely for the last six years. If friends, who have watched our beds for years, say the soil was peculiar, and is not a fair test, we answer, that may be, but we have arrived at this positive conclusion from our experiments and observation in other locations and soils, as well as in our own garden, and every step has only confirmed us in the opinion, that animal manures are too stimulating and exciting to the plant for the full bearing properties of the strawberry.

Fine fruit has been raised, we know, in fair quantities and of enormous size, in the use of animal manures, y t we think the quantity and quality would have been decidedly increased by the use of vegetable instead of animal manures. The latter causes the plant to run too much to vines, and start its runners before it has even

perfected the earliest part of the first crop of fruit, besides filling the earth generally with seeds, and undecayed portions of the straw, and fibrous portions from the barn-yard, which come into injurious contact with the numerous roots of the plant in its progress in the earth, which should always be kept as pure for the strawberry as possible.

Leaf-mould, decomposed turf or peat, well composted with new surface soil, or muck, ashes and lime, is a good manure for the strawberry. We wish it, however, distinctly understood, that few good soils need enriching at all for the strawberry; on the contrary, most of the soils (for instance, those in Western New York) would be more benefitted by being depleted by an admixture of half river-sand.

It is far better to feed the fruit properties instead of the plant; for we opine it will be found that the overfeeding of the strawberry is one of the most universal and destructive errors in its cultivation.

Some use liquid manures, composed of cow and hen droppings dissolved in a barrel of water; but they are not well adapted to assist the fruit bearing properties of the plant, but are good if the object be to send out runners and increase the plants.

On the opening of spring—the latter part of April or the 1st of May, in the latitude of the State of New York—it is well to give the plants an impetus, by liberally showering them every ten days or two weeks with a solution, in six gallons of water, of one quarter of a pound each of sulphate of potash, sulphate of soda, (Glauber salts,) and nitrate of soda, with one and a half ounces of sulphate of ammonia; or, if these cannot be conveniently obtained, use the same quantity of potash, sal soda, Glauber salts, and sal or muriate of ammonia; or a solution of either of them is beneficial if applied alone.

We have tried for many years various combinations in solution, but have been unable to obtain any so valuable as the first named.

We have always found plaster injurious to the strawberry, and ashes beneficial, when judiciously applied.

Transplanting.—This is a process to which the strawberry is sensitive. The plant will live under almost any treatment or any manner or mode of transplanting, but will not always yield a full supply of good fruit unless this process is appropriately performed. First we speak as to time.

For large plantations, or for ordinary cultivators, the spring is perhaps the best season; certainly it is the time when it can be the easiest and most successfully accomplished. The ground is soft and moist at that time, and the weather is usually favorable.

The next season generally recommended is the month of September. Plants can then be easily obtained, and after the cool, moist fall weather has commenced, the ground works easily, and there is not much difficulty in making them live. There is one danger, however, to be especially guarded against in fall transplanting; that is, the plants may not get so firmly rooted as to be enabled to withstand successfully the severe frosts of winter. A liberal covering of straw will assist in remedying this matter. An advantage gained over spring transplanting will be, the earth will not be as liable to pack so very hard around the plants in the fall, as under the hot summer's sun and rains, and the plants will not be so likely to be checked in their growth as in the droughts which often occur in June and July or August.

We have transplanted strawberry plants successfully for years, every month, from March until the 20th of October, without difficulty. With mulching, shade, and water, judiciously applied, it can be well done at any time. For our ordinary planting, we prefer the 1st of July for several reasons. The ground, if thoroughly prepared then, will not be subject to become so hard packed. The weeds will not be so troublesome. If the plants get well started, and are not checked in their growth, they will produce very nearly a full crop of fruit the following spring. We have found that these advantages will amply repay the little extra care in mulching, shading, and watering. Ten or fifteen days' later planting will seriously lessen the first crop, according to our observation. In spring planting, March will answer south of Philadelphia, and last of April and first of May for the north.

Manner of Transplanting.—The *best* way undoubtedly is, to take the first runners as soon as fairly set, and remove them with a transplanting-trowel, with the roots and earth undisturbed. This cannot be conveniently done, except the plants are in the same garden with the new bed. Neither have we ever found the first runners more productive than the subsequent ones, unless they are stronger.

In most cases, plants come from a distance, and great care should be taken to get as large a proportion of the numerous fibrous roots as possible; and in order to do this, the ground should always be well saturated with water, either artificially or otherwise, before the plants are taken up, and then the first thing to be done, is to mud the roots, by dipping them in a little mud-hole made in the garden soil, where the water has been poured and stirred, until it has become sufficiently thickened with the soil to leave a good coating of mud on the roots of the plants as they are withdrawn. This greatly protects the plants on a short or a longer transportation.

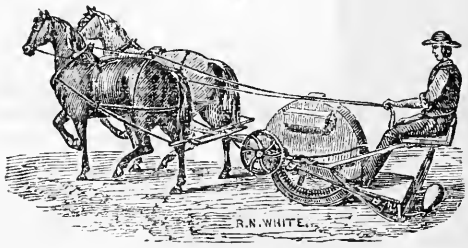
For transplanting, the earth should be levelled and made as flat as possible. If raised into beds or hills, it will invite the drought, to which the strawberry plant has a decided aversion. The plants should then be set out, leaving the roots in as nearly their natural spreading condition as possible; with the fingers press the pure earth compactly around the body of the plant, being careful not to set the plant too deep. If there is any old bark or decayed portion of the leaves on the plant, remove it before setting out: an old plant will usually renew itself by sending out a new set of roots on being transplanted, and it should be remembered that the strawberry plant, while it places its roots, mainly, near the surface of the ground, yet a portion of its larger roots penetrate favorable soils to the depth of from two to four feet, and even a greater depth in some cases.

Distance in Transplanting.—The Alpines and smaller varieties should always be eight inches apart, while the larger varieties should be allowed twelve to eighteen inches. Put one plant in a place, and let no other remain nearer than the above distances, and it is not material to success in cultivation whether you plant in

rows, beds, or hills, if you do not hill them up. We often set out in rows, two feet apart, and leave the plants one foot from each other in the rows; or, a method by which we have enjoyed great success in producing the finest fruit, has been to prepare a plot of ground, and cover it with strong plants one yard apart, and stimulate these, by a liberal application of liquid manures or soap-suds from the wash, to send out runners, which will soon supply the intermediate ground with plants of nature's own planting, which is a little better done than any one else can do it; care should, however, be taken to spread the runners so that the above distance of from eight to twelve inches can be preserved.

For *field culture*, set two plants in a place, one foot from the next, in rows three feet apart, so as to leave room for a horse-cultivator to pass between the rows, care being requisite not to approach nearer than eight inches to the plants, when at work among them. This whole process of field culture is the same in its general principles with that in the garden; except, for the convenience of a horse-cultivator to pass between them, the rows should one way be planted the same distance apart as corn; then the same treatment as to clean cultivation, and even water and mulching, as far as convenient, is desirable.

On the selection of a field for strawberries, it is very important to choose one free from all kinds of seeds and roots not decomposed.



DANFORD'S MOWER AND REAPER.

The annexed cut will give some idea of Danford's Mower, which is now being built in Pennsylvania, and will be ready for sale next season. We heard of this machine through some of our friends who visited Illinois two or three years ago, and who were highly pleased with its performance and manner of construction. The demand for them there has been so great, that none were able to be supplied for the eastern market. F. S. BOAS, of Reading, having now purchased the exclusive right to manufacture them for Pennsylvania, will be able to supply orders the coming season, thus saving a heavy expense for transportation from Illinois. We may also add that from what we have seen of articles from his manufactory, we have no doubt they will be well and strongly made, and be entirely satisfactory in this respect.

As our object is to introduce deserving implements to the notice of our readers, and then let them judge for themselves, we prefer to allow manufacturers to give their own description. One of Danford's machines was exhibited at the Philadelphia County and Philadelphia State Fairs this season. The price of a single mower is $115, cash; mower and reaper combined $130, cash.

The manufacturer recommends it first for its great durability and superior mechanical construction, ease of draft, and freedom from liability to get out of order; its exemption from the severe jerking motion which all other machines are liable to, thereby causing the journal boxes of the crank shaft soon to wear into an oblong space, which is entirely obviated in this machine by the double crank, pitman, and knife, which constitutes some of the distinguishing features of the iron mower and reaper.

Secondly.—It is very compact in its size, and takes but little room for storing, when not in use.

Thirdly.—The knives are made of one entire piece of cast steel, and are much more easily ground than any other style of knives, and are not liable to the objection of getting loose, as is the case with those which are rivited on to an iron bar.

Fourthly.—It will perform as much work, in as good a manner, as any other machine ever built, and is in reality the very machine for those who are desirous of having a first-rate article to buy, as it costs no more, nor as much as many other kinds; it will give as good satisfaction as any other, and will be a good machine when almost any other style is worn out. A careful examination of the machine will be sufficient to satisfy almost every intelligent farmer that it is entirely deserving all that has been said of its merits, upon which the manufacturer is willing for it to enter into competition with any other mower and reaper now before the agricultural community.

This machine received the first premium of the State Agricultural Society of Illinois, of 1854, after a trial of four days in competition with all machines of any note; also, the first premium of the Chicago Mechanics' Institute, of 1853 and 1854; La Porte County Agricultural Society, Indiana, of 1853 and 1854; Kane County (Ill.) Agricultural Society of 1853 and 1854, and whenever put in competition with any other in use.

Bucks County Exhibition.

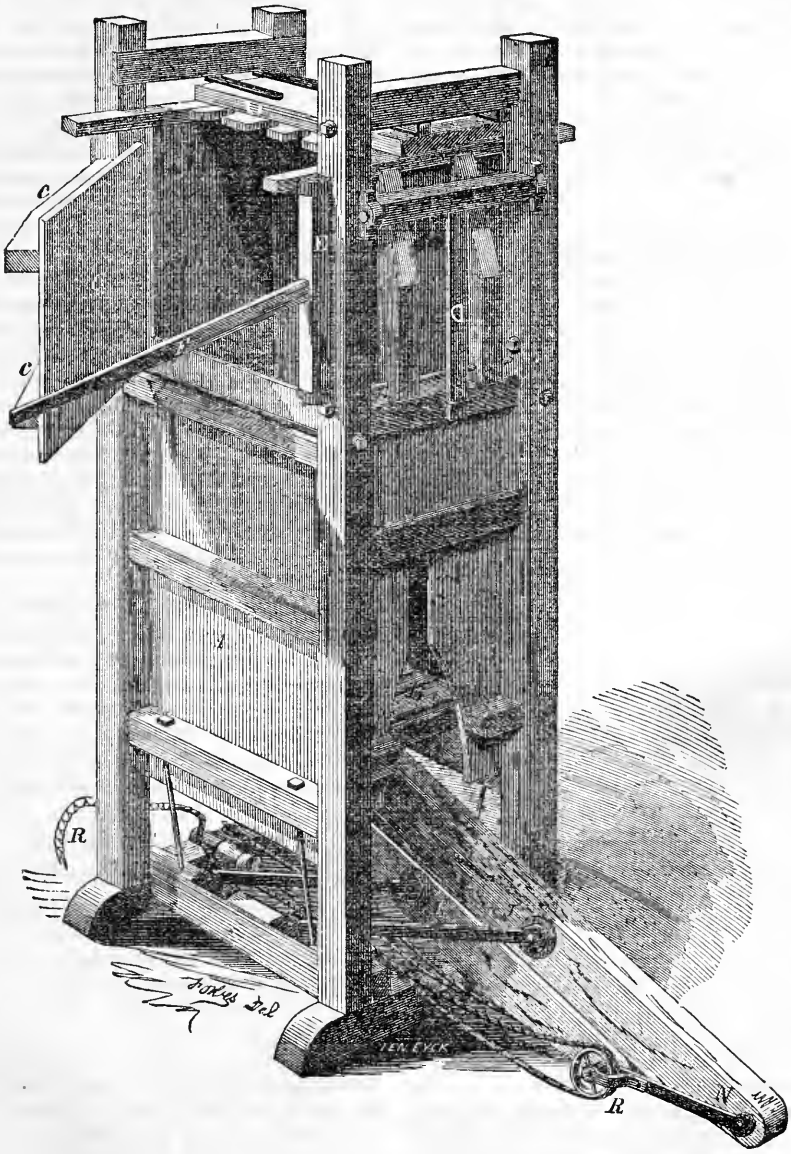
The Bucks County Twelfth Annual Exhibition came off as advertised last month, and we are informed was superior in the display and equal in attendance to any previous one. The display of horses, for which Bucks county farmers have long been famous, was especially good. The neat cattle were far more numerous than the appropriated space would contain, consisting principally of the Devon breed and some good Durhams, but the former were evidently the favorites in Bucks county. The display of sheep, Berkshire and Suffolk hogs, and poultry, were also very creditable.

Fruit and vegetables in great variety were exhibited, and of a size and quality surpassing all precedent in Bucks county, and indeed rarely met with any where; and the other departments contained select specimens of grain, articles of domestic economy, beautiful embroidery and handiwork of the ladies, manufactured goods of the ladies, also agricultural implements and machinery, all contributed to make up a most interesting and highly successful exhibition.

Bucks county has this season surpassed herself as well as her sister counties, in getting up and sustaining two large exhibitions rapidly succeeding each other.

VERTICAL HAY PRESS.

In a former volume we gave an engraving of a Horizontal Hay Press, manufactured by Deering & Dickson of New York, and now insert a cut of a Vertical Press, by the same manufacturers, which we have heard highly commended. They are calculated for bales of 150 to 500 pounds, and vary in price, exclusive of transportation, from $100 to $175. We subjoin description by the manufacturer.



The above Press, except in its upright position, is but slightly different from the Horizontal. When the door C, which, as in the cut of the other machine, is represented open, is closed, the head U, is moved over to either side at pleasure; the hay is then thrown in, and when the box is full, the head is moved back again to the centre of the press —the power being then applied to the parallel levers J K, operated by the system of ropes and pullies, N R R, press the Follower B up against the hay with the same simple and mighty power exercised in the horizontal. The door C, and also a similar door on the other side, is then opened; the bale is bound, and the ends of it being relieved by releasing the end of the bar or handle D, it is taken out from either side at pleasure. It is worthy of remark that the doors of these presses do not have to be opened by pounding on any part of them with mallets or crowbars, as in the ordinary Hay Presses, but are opened very simply and easily, with one hand. This Press, also is so constructed that it can be taken apart for transportation, and, by the printed directions, put up again without any aid from mechanics; while the number of pieces for shipping is no greater and no less conveniently handled than the parts of the Horizontal. While this is an excellent stationary press, it is also a conveniently portable one; as, (weighing little more than the other press)

it can be readily shoved up a couple of plank on a wagon, or, by spiking on a pair of runners, it can be laid down and moved, like the Horizontal, on the ground. The Horizontal Press is, of course, the more convenient, but requires some care in tramping in the hay in order to make a bale as nice in appearance as that, under ordinary care, coming from the vertical. We find that generally, particularly in the Western and Southwestern States, this little extra care is quite willingly taken, in order to possess this greater convenience; while, on the other hand, those who are very particular about the appearance of the bale, overlook this convenience, and prefer the Vertical, which, with the exception of this convenience, (which is possessed by no other than this Parallel Lever Horizontal,) is warranted to be, in all respects, the simplest, most convenient, most compact, and powerful Hay Press in the United States.

Effects of Heat upon Meat.

A well cooked piece of meat should be full of its own juice or natural gravy. In roasting, therefore, it should be exposed to a quick fire, that the external surface may be made to contract at once, and the albumen to coagulate, before the juice has had time to escape from within. And so in boiling. When a piece of beef or mutton is plunged into boiling water, the outer part contracts, the albumen which is near the surface coagulates, and the internal juice is prevented either from escaping into the water by which it is surrounded, or from being diluted or weakened by the admission of water among it. When cut up, therefore, the meat yields much gravy, and is rich in flavor. Hence a beef-steak or a mutton chop is done quickly, and over a quick fire, that the natural juices may be retained. On the other hand, if the meat be exposed to a slow fire its pores remain open, the juice continues to flow from within, as it has dried from the surface, and the flesh pines, and becomes dry, hard, and unsavory. Or if it be put into cold or tepid water, which is afterwards gradually brought to a boil, much of the albumen is extracted before it coagulates, the natural juices for the most part flow out, and the meat is served in a nearly tasteless state. Hence to prepare good boiled meat, it should be put at once into water already brought to a boil. But to make beef tea, mutton broth, and other meat soups, the flesh should be put into cold water, and this afterwards very slowly warmed, and finally boiled. The advantage derived from simmering, a term not unfrequent in cookery books, depends very much upon the effects of slow boiling as above explained.—*Chemistry of Common Life.*

Flour.

Those of our readers who are accustomed to glance over the reports of market prices, from week to week, must have noticed that while the common brands of flour are from one to two dollars lower than they were two or three months ago, "extra Genesee" is still quoted about as high as ever. The question naturally arises, whether this popular brand is worth the great difference in price now demanded for it. We know there are multitudes of families who will use nothing else. "Extra Genesee" they must have, whatever the cost, and as the supply is limited, the fortunate holders have been able to obtain their own price. But whether this preference is a mere whim, or is justified by the superior excellence of the article in question, is a matter of some consequence to those of us who wish to use nothing but good flour, but do not feel able to pay twelve or thirteen dollars per barrel for it. The *N. Y. Times* has some information on this point, which deserves the consideration of every prudent housekeeper. We give the gist of the article:

"Now what is this 'Extra Genesee?' A number of years since, the best flour was undoubtedly obtained from wheat grown in the 'Genesee Country,' embracing a dozen or more counties in Western New York. The superior character of this flour was owing, in part, to the excellent mills in that section. This fact having become known among Eastern consumers, this flour acquired an established reputation, which it has retained long after there were any real grounds for the distinction. Bakers, and those who use large quantities of flour, have been aware of this, and it is seldom that we see the flour unloading at their establishments marked with this obsolete brand. Equally good flour is now obtained from wheat grown in Canada, Ohio, Michigan, Indiana, Illinois and Wisconsin. But the great majority of families still cling to the old brand as the only one worthy of confidence.

"The truth is, not one-fourth of the 'Extra Genesee Flour' sold in this market is made from Genesee wheat. As there is more champagne wine sold in New York city alone than there is produced in the whole country where that wine is native, so there is at least three times more Genesee flour sold than is grown in the whole Genesee country proper. Much of this brand of flour comes from the extensive mills at Rochester, but it is well known that those mills derive their principal supplies of wheat from the Western States and the Canadas, and in this case, Genesee flour means that *made* (not grown) in that country, or rather upon the Genesee River.

"The finest, whitest flour is that which contains the greatest proportion of starch, but such flour is not by any means best adapted to supplying the laboring man with the elements of muscle or power. The dark Southern flour usually abounds in gluten—a substance more nearly resembling human muscle; and the man who is obliged on Saturday night, from the scantiness of his earnings, to send home a barrel of dark Southern flour, may console himself with the certainty that his low price flour will yield himself and family more of the needed nourishment than that which would have left thirty to fifty per cent. less of his hard earned money for other necessities.

"Our advice to the mass of flour buyers is, to cease to attach so much value to the outer marking upon flour barrels. If not sufficiently experienced yourself to judge of the quality, go to a reliable dealer and buy flour *warranted good.* If your bread is not as *white* as starch, it may taste quite as well, if you are assured that it is fully as nourishing, and remember at the same time that it costs a great deal less money; though if you throw away your partiality for a particular brand, you will in three times out of four get flour equally good for much less money."

A GREAT PUMPKIN.—Among the monsters in the horticultural exhibition in New York city are a pumpkin measuring nearly eight feet in circumference, a squash from Stamford, Ct., five feet in circumference, a yellow French squash between 7 and 8 feet around, and a beet 30 inches around.

The Farm Journal for 1856.

We would not have our readers lose sight of the fact, that with the December number closes the volume of the Farm Journal. The time for the renewal of subscriptions is, therefore, close at hand, and we are led to hope that the kind friends, who, ever since the Journal has been in existence, have lent it the aid of their influence and patronage, will continue their friendly efforts. As will be seen by a reference to the prospectus, a change will be made in the editorial department. The editorship of the next volume will be placed under the control of A. M. Spangler, at present editor of the Progressive Farmer, and formerly editor and publisher of the Farm Journal.

It is also contemplated to merge the Progressive Farmer and Farm Journal into one publication, by which arrangement the services of many of the excellent contributors to the Progressive Farmer will be secured for the Farm Journal. In addition to this, other attractive features will be presented in the course of the new volume, which can scarcely fail to render it fully equal to the best agricultural periodical in the country.

We, therefore, confidently ask, not only a continuance of former patronage, but an increased support from the friends of agriculture every where. A very little effort will secure the desired object. There are few who are now subscribers whose influence is not sufficiently great to secure at least *one* subscriber, and in the majority of cases, enough to make up a club. Will not each one do us this service? It requires but little time—involves no expense, and the object secured by it will be the more general diffusion of agricultural information. Such an object is certainly a worthy one, and we hope to hear that very many are engaged in its accomplishment.

On Fattening Poultry.

It is obvious that the value of any substance used as a food for fattening animals can only be ascertained by a reference to the relative quantity of warmth-giving, flesh-forming, and fat-forming materials it contains; and such an examination will give us a true index of its money value, and enable us to ascertain how far the practice of feeders has been based upon right principles.

Oats and Oatmeal.—Oats or oatmeal are perhaps more largely employed than any other grain in fattening poultry; and in this case the experience of feeders strikingly corresponds with the results afforded by scientific examination. Oatmeal contains, in every 100 lbs., 6 lbs. of fat or oil, 18 lbs. of flesh-forming, and 63 lbs. of starchy materials; oats contain the same quantity of fat in every 100 lbs.; but in consequence of the large proportion of husk, the quantity of flesh-forming and starchy substances is lessened to 15 lbs. of the former and 47 lbs. of the latter; thus oats are not as valuable for fattening purposes as oatmeal—especially as, from the presence of the husk, and their undivided state, they are not so rapidly digested.

Wheat and Bran, Middlings, &c.—Wheat, in its entire state, contains only one-half the fatty materials of oats, and hence it is not usually employed in fattening; the fat of wheat resides almost entirely in the outer portions, which, when removed, constitute bran, pollard, and middlings—the latter, or finest bran, has been remarked by Prof. J. Johnston as being almost similar in its composition to oatmeal, being much richer in both fat and flesh-forming food than the inner parts of the grain. Its value in fattening pigs has been long known; and the writer can speak from long experience that it is equally efficacious in fattening poultry. It contains 6 lbs. of fat, 18 lbs. of flesh-forming, and about 53 lbs. of warmth-giving food in 100 lbs.

Barley and Barley-Meal.—Barley is not advantageous as a fattening food, as its per centage of fat is very low, being not more than 2 lbs. in every 100 lbs.

Indian Corn.—Indian corn is remarkable for the large quantity of oil contained in yellow varieties—nearly 8 lbs. in every 100 lbs. Its capability of supplying flesh is not so great as that of oatmeal, hence it is not well adapted for laying hens, which it renders too fat; but this peculiarity fits it remarkably for fattening poultry, for which purpose it is largely employed in the United States.

Rice.—Rice is one of the least advantageous foods either for fattening or supplying flesh; it contains only a trace of fatty materials, and less than half the quantity of flesh-forming food contained in oats.

Peas and Beans.—All the varieties of pulse contain a much larger proportion of flesh-forming or nitrogenous substances than any grain—in fact, about 25 per cent., or double the quantity contained in wheat; whilst the proportion of fat is not more than 2 in the 100. This composition admirably fits them for the support of the animals undergoing much muscular exertion; given to fattening animals, they are apt to harden the fibre, as in the well known case of bean-fed bacon; and the elaborate experiments of Mr. Lawes in pig and sheep-feeding prove most distinctly that the increase in weight of a fatting animal is dependent on the carbonaceous, and not on the nitrogenous constituents of its food.

Milk.—Milk is a most advantageous addition to the food of poultry, as it contains 3 lbs. of fat (butter), and nearly 5 lbs. of warmth-giving (sugar of milk), and 4 lbs. of flesh-forming food (curd), in every 100 lbs. Skimmed milk, or butter milk, from having had the fat removed, are by no means so advantageous.

Animal Fat.—If any pure fat is given to fatting fowls, it is evident, from what has been previously stated, that it should be of as solid a character as possible, for as it is assimilated without much change it is evident that the firm character of the fatted poultry is much increased by it. The evil effect of linseed-cake upon geese has already been alluded to, arising from the liquid condition of the oil contained in it; the best addition to the food of poultry consists, therefore, of the hardest and cheapest variety of common fat, namely, mutton suet, or what is equally good, the paring of the loins, which are at present sold to the tallow melter.

Cooking Food.—One other circumstance remains to be considered in this section, namely, the alteration effected in food by cooking. The influence of heat is chiefly exerted, in the case of vegetable foods, on the starch which constitutes so large a portion of all grain: this in its natural state consists of small granules, which are (as in the well known case of arrowroot, a very pure variety of starch), insoluble in cold water, from the circumstance that each is coated with a firm membrane;

when heated to a degree somewhat short of boiling water, this membrane cracks, and the interior gummy portion of each granule dissolves in the water and thickens it. There is no doubt but that starch, thus altered, is more readily and rapidly digested than in its insoluble state; hence the advantage of cooked food for fattening pigs, and the desirability of employing boiling water to scald the meal used in fattening poultry.

It may perhaps lead to easier understanding of the relative value of the different kinds of food, if their constituents are stated in a tabular form, it being borne in mind that such statements are merely approximations to the truth, as the composition of grain varies with the character of the season and the soil.

Table showing the composition of the substances employed in fattening poultry.

EVERY 100 LBS. OF	Fat or Oil.	Flesh-forming Food.	Warmth-giving Food.	Mineral Substances.	Husk or Fibre.	Water.
Oats contains	6	15	47	2	20	9½
Oatmeal	6	18	63	2	2	9
Wheat	3	12	70	2	1	12
Middlings (fine bran)	6	18	53	5	4	14
Barley	2	11	60	2	14	11
Indian Corn	8	11	65	1	5	10
Rice	A trace	7	80	A trace	—	10
Beans and Peas	2	25	48	2	8	15
Milk	3	4½	5	¾	—	87

More Imported Stock.

To the Editor of the Farm Journal:—The ship Potomac, Capt. REED, from Liverpool, that reached this port on the 6th inst., had on board seven head of Short-Horn cattle and 14 Southdown sheep, all in high condition.

The lot of cattle consists of one young bull of the celebrated Booth stock and six heifers, obtained from the most celebrated breeders in England. They are of unsurpassed style and beauty. Several of them have taken first prizes at the Royal Agricultural Fairs in England. A portion of the sheep have also taken first prizes, and are perhaps superior to any ever brought to this country.

The cattle and part of the sheep are for that wealthy and spirited breeder of fine stock, R. ATCHESON ALEXANDER, Esq., of Woodford county, Kentucky, who has at this time a large herd of imported cattle, composed of Short-Horns chiefly, with some Ayrshires and Alderneys. The balance of the sheep were for Col. L. G. MORRIS, of Mount Fordham, Westchester county, N. Y. Col. MORRIS is also a large imported and highly successful breeder of the most valuable cattle, sheep, swine, &c.

This fine lot of stock came consigned to my care, and have been forwarded by me to their places of destination, and will no doubt add much to the improvement of the stock of their respective localities.

Phila., Oct. 16th, 1855. AARON CLEMENT.

Prolific Character of Fruit Trees in California.

The editor of the California Farmer says:

"We can cite innumerable instances of peach trees where *every peach on the tree was double*, and several cases where the peaches were *triplets*. Apples and pears are found double, and melons in handsomely formed pairs, twin grown. We know, however, that these facts are becoming so common, among those who are observant, that they are of every-day occurrence, but the great mass of the people should know the abundance that is soon to be poured out upon us.

"The strawberry has already proved a *perpetual* fruit. The fig gives us *two crops*, and ere long will yield *three*; and we hesitate not to say that by and by, at every State Fair, there will be exhibited many kinds of fruit of a *second crop*, and several also of *perpetual* species, never before known of that habit. We shall also have on exhibition the second crops of our cereal grains, for however much we now have to boast of in this land of plenty, 'the half has not yet been told.'"

Earthing up Celery.

The present season has been a favorable one for celery, as indeed it has been for most crops, and celery will no doubt be fine and plentiful. Where only sufficient is grown for the supply of the family, a little extra care should be given to earthing up, which is amply repaid by having clear sticks, nicely blanched. For very early use a small portion should be commenced as soon as large enough to draw earth to taking care of its getting into the crown, which should be carefully guarded against. The bulk of the crop will be better left till towards the end of September before earthing. If any manure water is obtainable before earthing, it is much benefitted by having a good soaking, especially if the ground is in any way poor, as it likes a very rich soil.

In earthing, careful growers always go along first with the hand, and pull off any little short leaves that would, if buried, only rot, and draw the earth nicely about each plant. A portion of the soil is then loosened up with the spade and made tolerably fine, and pushed up towards the plants. If they have been planted in trenches, if filled up level, it is sufficient for the first time, giving it one or two good earthings at intervals of one or two weeks.

For field culture, or where the breadth is large, and grown for market, recourse must be had to the plow, or the expense would be too large to secure a return. Many earth up with the plow without any handling of the plants, and with care and caution are able to do it without disturbing the leaves much; but as a general rule, it will pay to draw a little to them first, with a hoe or the hand, as if a clod gets on the heart of the plant, the leaves get twisted and bent, and are worth less in the market. Except the soil is mellow, celery will hardly pay as a crop, from the difficulty there is in getting the earth sufficiently fine about the leaves.—*Country Gentleman.*

Guano for Insects.

A correspondent of the *Horticulturist* says:—"Some time last summer while budding some young peaches, I found that ants had taken possession of some ten feet in one row. They very earnestly resisted my attempts to inoculate the tree, inflicted many unpleasant wounds on my hands and arms. In order to disperse the warlike little nation, I sprinkled near a pint of fine guano along the little ridges. This threw them into immediate consternation. I noticed little collections of winged ants huddled close together, and seeming to be quiet, while those without wings ran about in great agitation. The following day not an insect could be found, where the day previous they appeared to be innumerable.

ROSES.—According to Agassiz, no fossils of the rose have ever yet been discovered by geologists. He thinks the creation of the plant is coeval with that of man.

LIST OF PREMIUMS AWARDED,

At the Fifth Annual Exhibition of the Pennsylvania State Agricultural Society, held at Harrisburg, September 25th, 26th, 27th and 28th, 1855.

CATTLE.

No. 1—Short Horns.

To James Gowen, Esq., President:—The undersigned respectfully submit the following list of premiums awarded for the best Short Horn Durham stock.

To John Evans, York, Pa., for best bull, 8 years old, $20
To G. Lauck, Dauphin Co., for second best, 3 years old, 15
To N. Ewing, Fayettte Co., for third best, 4 years old, 8

Bulls between Two and Three Years Old.

To Jas. Gowen, Philadelphia, for best bull, $15
To Chas. McGlaughlin, Fayette Co., second best, 8
To A. W. Milleisen, Harrisburg, third best, 4

Bulls under One Year Old.

To N. Ewing, Fayette Co., best bull calf, 5 months old, $5
To G. Crossland, Uniontown, second best, 3 months old, 3
To G. Crossland, Uniontown, third best, 4 months old, 2

Best Cows over Three Years Old.

To Jas. Gowen, Philadelphia, best cow, "Red Rose," 5 years old, $20
To John Evans, York co., second best, "Rosette," 3 years old, 10
To James Gowen, Philadelphia, third best, "Dairy Maid," 4 years old, 6

Heifers between Two and Three Years Old.

To N. Ewing, Fayette co., best heifer, 2 years old, $15
To N. Ewing, Fayette co., second best, do do 10
To Jas. Gowen, Philadelphia, third best, "Lilly," 2 years old, 5

Heifers between One and Two Years Old.

To N. Ewing, Fayette co., best heifer, $10
To N. Ewing, Fayette co., second best, 5
To Andrew J. Stewart, Spruce Creek, third best, 2

Robert Bryson,
Wm. R. Gorgas,
Henry Drinker,
Committee.

No. 2—Devons.

To James Gowen, Esq., President of the Pennsylvania State Agricultural Society:—Sir:—Your Committee, No. 2, Class 1, on Devon Cattle, have attended to the duty assigned them, and beg leave to make the following report:

Best Bull of Three Years and Upwards.

To Christian Elerly, Whitehill, Cumberland, the first premium of $20

Best Bull Calf under Ten Months.

To John Echsternocht, Strasburg, the first premium of $5
To Nathaniel Ewing, Uniontown, Fayette co., the second premium of 3

Best Devon Cow Three Years and Upwards.

To Geo. M. Lauman, Harrisburg, the first premium of $20
To Jacob S. Haldeman, New Market, York co., the second premium of 10

Best Heifer between One and Two Years Old.

To Jacob S. Haldeman, New Market, York co., the first premium of $10

The display of Devon stock was not at all extensive, nor was that on exhibition of a very superior character, with the exception of Mr. Lauman's cow. First premiums have been awarded by your Committee in several instances where they could not consider the stock entitled to such a distinction, but as there was no great degree of competition, there was no discretion on the premises, but to award the first to the best which were presented.

All of which is respectfully solicited.

Joseph Cope,
John McKeley,
J. G. Blaine,
Committee.

No. 4—Ayrshire.

To James Gowen, Esq., President Pennsylvania Agricultural Society:—The undersigned—the Committee of Judges upon Ayrshire Cattle—Committee No. 4, respectfully report, that after a careful examination of all the animals upon exhibition claiming their attention, they award

To John Merryman, Baltimore co., Md., for thorough bred bull "Highlander," 3 years old, the 1st premium of $20
To Ramsey McHenry, Harford co., Md., for his thorough bred bull, "Darnley," 17 months old, the first premium of 10
To Ramsey McHenry, Harford co., Md., for his thorough bred bull "Mars," 15 months old, the second premium of 5
To Ramsey McHenry, Harford co., Md., for his thorough bred bull "Erroll," 14 months old, the third premium of 3
To Ramsey McHenry, Harford co., Md., for his thorough bred cow "Mysic," 5 years old, the first premium of 20
To Ramsey McHenry, Harford co., Md., for his thorough bred cow "Rosalie," 4 years old, the second premium of 15
To Ramsey McHenry, Harford co., Md., for his thorough bred cow "Tulip," 3 years old, the third premium of 6
To Ramsey McHenry, Harford co., Md., for his thorough bred heifer "Jeannie Dean," 1 year old, the second premium of 5

Mr. Merryman also exhibited a "Spanish" cow, which, though not coming properly within the range of their notice, they deem worthy of honorable mention, as possessing striking evidences of good milking qualities.

The undersigned, whilst they regret to say that there was not a single animal of this valuable variety upon exhibition from our own state, they cannot too warmly express their gratification with the high and truly commendable public spirit of our Maryland friends, which induced this valuabl.

contribution to the general display of fine animals. The bull of Mr. Merryman and the herd of Mr. McHenry were beautiful specimens of the breed, exhibiting strongly its prominent characteristics, reflecting great credit upon those gentlemen as careful and judicious breeders, and we promise them, in the name of the Society, a cordial welcome upon all future similar occasions.

A. R. McIlvaine,
John C. McAllister,
Caleb Caunalt.
Committee.

No. 5—Holstein.

To James Gowen, President of the Pennsylvania State Agricultural Society:—We, undersigned, appointed on Committee No. 5, Holstein Cattle, make the following award

To John Merryman, Baltimore co., Md., for Holstein cow, 3 years old, $8

Yours, &c.
John S. Isett,
John Wallace,
Abner Rutherford,
Committee.

No. 6—Alderney.

To James Gowen, Esq., President:—The Judges appointed to examine the relative quality of Alderney Cattle, report as follows:

To Dr. L. H. Twaddell, West Philadelphia, Alderney bull, first premium, $20
To. Geo. Lauman, Harrisburg, Alderney bull, second premium, 15
To Wm. C. Wilson, Baltimore, Alderney bull, third premium, 8
To Jacob Mish, Harrisburg, Alderney bull calf, third premium, 2
To G. Lauman, Harrisburg, Alderney cow, first premium, 20
To G. Lauman, Harrisburg, Alderney cow, second premium, 15
To John Curwen, Harrisburg, Alderney cow, third premium, 6

Respectfully submitted,
George M. Keim, Chairman.
Henry Drinker,
Wm. M. Henderson,
Hugh Craig,
Committee.

No. 7—Natives or Grades.

To James Gowen, Esq., President:—The undersigned Judges on Natives or Grades respectfully report, that we have attended to the duties of our appointment, and offer the following as the result of our investigation, viz:

To A. O. Hiester, Harrisburg, best Grade bull, $8
To Nathaniel Ewing, Fayette co., best bull calf under 10 months, 3
To J. C. Atkinson, Hogestown, 2d best bull calf, 1
To N. Ewing, Fayette co., best cow over 3 years old, 12
To J. Merryman, Cockeysville, Md., 2d best cow, (Durham and Native,) 10
To John Curwen, Harrisburg, 3d best cow, (Grade,) 8
To Wm. Metzger, Harrisburg, only 3 year old heifer, 10
To J. Merryman, Cockeysville, Md., only heifer between 2 and 3 years, 10
To J. Merryman, do., best heifer between 1 and 2 years, 6
To J. A. Jack, Harrisburg, 2d best do do do 4
To G. M. Lauman, do 3d best do do do 3
G. Crossland, Uniontown, best heifer under 10 months, 3
To J. Caslow, Harrisburg, 2d best do do 1
To John Young, do calf, 4 weeks old, (special,) 1
To Charles McLaughlin, of Fayette county, for display of Grade heifers from 1 to 4 years old, 20

Wm. H. Holstein,
David S. Ker,
Martin Bell,
Judges.

No. 8—Working Oxen.

Hon. James Gowen, President:—The undersigned your Committee to examine Working Cattle report. They regret that so very few of that useful class of animals have been submitted for their examination.

In our judgment oxen afford the most economical draft for farmers of small means and rough land. Patient and enduring, they will labor on less grain feed than any other animal. From two to four years of age, they will perform their daily toil and then be valuable for the shambles. The whole cost of fixtures would be less than the repairs of the harness of horses or mules for a single year, and can be put on and taken off in less time.

Of those exhibited we were much pleased with Wm. Metzger, of Harrisburg, one yoke working cattle, and to him award the first premium of $20

To G. Crossland, of Uniontown, Fayette co., we award the 2d premium of 10

Wm. M. Watts,
Abram L. Pennock, Jr.,
Ed. M. Biddle,
Committee.

No. 9—Fat Cattle.

To the President of the Pennsylvania State Agricultural Society—Sir:—Your Committee on Fat Cattle take pleasure in awarding

To Wm. Metzger, of Harrisburg, for the best fat heifer, $10
And to the same person for best fat steer, 15

H. P. Robeson,
John S. Foster,
John W. Craighead,
Committee.

No. 10—Milch Cows.

To James Gowen, Esq., President of the State Agricultural Society:—The undersigned being the Judges appointed on No. 10 of Class 1 respectfully report:

That on examining the list of Judges, and comparing it with the premium list, they find that Judges have been appointed to award premiums for the best cows of all the different breeds exhibited on the ground, leaving the undersigned, as they inferred, the duty of awarding premiums to the best, second and third best cow, as proven by the quantity of milk and the amount of butter made from such milk within the given periods, and under the circumstances set forth in the instructions given under the head of Milch Cows, without regard to the breed or character of the stock from which such cows spring.

The value of a cow as a milker is best tested by the quantity of milk, and the quantity of butter or cheese, which she will yield during a whole season; but as it could not be expected that any person would keep an accurate account of the produce of one or more cows for so long a period, and still less should we expect that two or more persons would keep their cows exactly alike in reference to provender, pasture, &c., during a whole season, the Executive Committee seem to have thought the nearest approximation to an accurate result would be to place the cows upon an equality,

as near as could be, in regard to their keeping for a limited time, and ascertain the exact amounts of milk and butter which such cows would yield during the time of trial.

Under this view of the subject, the undersigned did not suppose that it would be required to have the cows entered for competition under the head of "Milch Cows" on the exhibition ground, or that the Judges of Class 1, No. 10, should take any notice of the condition or appearance of the animal, but in their decision be guided and governed by the statement required in the instructions contained in the premium list. On application to the Secretary for statements deposited in reference to this subject, they found that no such statements had been furnished, consequently there was no competition of "Milch Cows" under the instructions given, and nothing left for the undersigned to do.

Whilst the undersigned do not repine at being thus relieved from duty, they cannot forbear expressing their regret that so important a branch of domestic economy should be so little appreciated by the farmers of Pennsylvania. Milch Cows form part of the stock of every farmer, and the difference between a good cow and a bad one, each requiring the same amount of care and feed, is so apparent, that it ought to arrest the attention of every agriculturist. Nor is it the agriculturist alone that is interested in this subject. In this happy land of peace and plenty, every mechanic residing in the country, and every frugal and industrious laborer, can afford to, and generally does, keep a cow; and even those who inhabit cities and towns, where cows cannot be conveniently kept, find milk, butter and cheese indispensable articles in their families, and are, therefore, all interested in producing the greatest amount of those necessary articles of food at the least expense. And, although the test proposed by the Agricultural Society would not make the farmers' cows yield more milk, it would have served to show the difference between a good cow and an indifferent one, and it was hoped would arouse the attention of the farming community from the apathy which seems to prevail on this important subject. The Agricultural Society cannot be subjected to any censure for the indifference manifested on this subject; the premiums offered on this branch of the exhibition, when compared with others, taking into view the risk, trouble and expense to be incurred, will be found very liberal; and if those who are most deeply interested cannot be induced to make some effort to improve their Milch Cows, we must permit them to go on in the old way, in which they milk their cows one-half the season, and the cows milk them the other half. All of which is respectfully submitted.

JOHN STROHM,
R. R. REED,
JOB HAYES,
Committee.

No. 11—SPECIAL PREMIUMS.

To James Gowen, President of the Pennsylvania State Agricultural Society :—The Judges appointed to award special premiums for animals that have taken the first premium at our previous exhibitions report:

That one horse and three cows were the only animals entered for these premiums, and the Committee concur in reporting that the horse called "Clifton," entered by James Reed, of Dauphin, is entitled to the first premium of $50, he having taken the first premium at the State Fair at Lancaster in 1852. No other horse being entered the Judges have not awarded the second premium.

The Judges have been involved in difficulty in awarding the premium upon cows; one of their number being of opinion that it was intended to class the breeds of animals to which special premiums are to be awarded, and not put different breeds in competition with each other. They report it, however, as their unanimous judgment, that the Durham cow called "Sally," entered by John Evans, of York, is entitled to the first premium of $50, and that the Durham cow "Isabella," entered by James Gowen, of Philadelphia, is entitled to the second premium of $30. The only other cow entered was a Devon, which took the first premium at Pittsburg.

CALEB CAUNALT,
JOSEPH COPE,
THOS. B. BRYSON,
Committee.

No. 12—HORSES AND MULES.

To James Gowen, Esq., President:—The Committee for examination of Horses, &c., respectfully report, that they have devoted much time and attention to the duties of their appointment, which have not been free from difficulties in arriving at the conclusion to which they have come. The display of some descriptions of Horses has been gratifying, and is creditable to their breeders. Your committee after due deliberation have awarded the following premiums:

For Horses for all work.

To David R. Porter, Harrisburg, Stallion "Chester Lion," first premium, $30

[It is proper to state that the owner being one of the Committee took no part in this decision.]

To Richard Kirkpatrick, Petersburg, Perry co., Stallion "Clifton," second premium, $15

To Abram. Wolf, Mt. Vernon, Chester co., Stallion "Red Buck," third premium, 5

To C. Grevemeyer, York, brood mare with colt at her feet, first premium, 30

For Heavy Draft.

To Joseph Boyer, Elizabethtown, Stallion "Trafalgar," first premium, 30

To Andrew J. Stewart, Spruce Creek, Stallion "Juniata Fire King," second premium, 15

To Lewis Whistler, Lewistown, Stallion "Canadian Lion," third premium, 5

For Quick Draft.

To S. R. Sagers, Philadelphia, Stallion "Gray Sherman," first premium, 30

To James Reede, Dauphin, Stallion "Red Bird," second premium, 15

To Jacob Otstot, Hogestown, Stallion "Don Pedro," third premium, 5

To I. G. Updegrove, Dauphin co., brood mare with colt at her feet, first premium, 30

For Draft.

To Henry Lehmans, Martinsville, Lancaster co., Stallion "Powhattan," first premium, 30

To Samuel Huston, Hogestown, Stallion "Clifton," second premium, 15

To John Shank, Maytown, Lancaster co., Stallion "Derry Lion," third premium, 5

To George Garvench, Harrisburg, dark brown mare, first premium, 30

To Philip Linn, Harrisburg, dark bay mare, second premium, 15

For Three Years Old.

To John Ketterer, Kingston, sorrel stallion, first premium, 30

To James H. Wilson, Dauphin, dark bay stallion, second premium, 15

To Samuel Deal, Harrisburg, bay stallion, third premium, 5

To James M. Anderson, Dillsburg, roan mare, first premium, 30

To Samuel Huston, Hogestown, black mare, second premium, 15

To Abrm. Hanneman, Cumberland co., sorrel mare, third premium, 5

For Two Years Old.

To Conrad Page, Harrisburg, chestnut stallion, first premium, 30

To Henry Balsbach, Union Deposit, roan stallion, second premium, 15

To Thomas McIlhenny, Mechanicsburg, black colt "Clifton," third premium, 5

To Wm. R. Gorgas, Eberly's Mills, Cumberland co., dark bay mare, first premium, 30

To James M. Anderson, Dillsburg, sorrel mare, second premium, 15

To John Mumma, Harrisburg, black mare, third premium, 5

For One Year Old Colts.

To James H. Wilson, Dauphin, dark bay stallion, first premium, 15

For Matched Horses for Carriages.

To George M. Lauman, Harrisburg, one pair dark brown geldings, first premium, 30

To Richard Fox, Hummelstown, one pair bright bay geldings, second premium, 15

To T. H. Carpenter, Belmont, Lancaster co., one pair bay stallions, third premium, 5

For Draft or Farm.

To Samuel Huston, Hogestown, one pair matched dark brown geldings, first premium, 30

To David Black, one pair matched dark gray geldings, second premium, 15

To G. D. Trout, Alumn Bank, one pair matched brown geldings, third premium, 5

For Geldings and Single Mares for Saddle.

To Ely Byers, Harrisburg, bay gelding, first premium, 10

To John Gemmel, Alexandria, Pa., bay gelding, second premium, 7

To Henry & Wilson Orth, Harrisburg, sorrel gelding, third premium, 5

To Wm. J. Robinson, Dauphin, bay mare, first premium, 10

To J. W. Muench, Harrisburg, gray mare, second premium, 7

To G. D. Trout, Alumn Bank, blooded mare, third premium, 5

For Geldings and Single Mares for Harness.

To David Miller, Lancaster, bay gelding, first premium, 10

To Henry McCormick, Harrisburg, bay gelding, second premium, 7

To Thomas Davis, Pottsville, roan gelding, third premium, 5

To D. J. Unger, Harrisburg, dun mare, first premium, 10

To R. C. Stamms, Lancaster, bay mare, second premium, 7

To Wm. C. Henderson, Pequea, Lancaster co., sorrel mare, third premium, 5

For Jacks and Mules.

To Wm. C. Henderson, Pequea, Lancaster co., one jack, first premium, 20

To J. G. Lauck, Dauphin co., pair of mules, first premium, 20

To Richard Fox, Hummelstown, pair of mules, second premium, 10

To Thos. Wood, Pottsville, pair of mules, third premium, 10

Your committee also recommend a premium of $20 to Edward Harris, Moorestown, N. J., for his Norman horse "Diligent," and a premium of $15 each to Wm. C. McCune, Oakville, and Henry Stouffer, of York co., and a premium of $10 to David J. Unger, Harrisburg, for his fast trotting bay gelding. All which is respectfully submitted.

David R. Porter,
James Irvin,
Wm. J. Leiper,
A. E. Kapp,
Committee.

No. 14—Sheep and Wool.

To James Gowen, President of the Pennsylvania State Agricultural Society:—The undersigned, who were appointed on Sheep and Wool, Committee No. 14, respectfully report that they have made the following awards:

Cotswolds.

To Henry Carroll, of Baltimore co., Md., for best imported buck, first premium, $10

To same for best 4 imported ewes, 10

To James N. Goldsborough, of Easton, for best buck, not imported, 10

To same for second best do 6

To Henry Carrol, of Baltimore co., Md., for best 4 lambs, 10

Middle Wooled.

To J. Cope, of West Chester, Pa., for best Southdown buck, 10

To same for second best do 6

To same for best 3 Southdown ewes, 10

To same for second best do 6

To same for best 4 Southdown lambs, 10

To same for second best do 6

Merinoes.

To Isaac Kurtz, Juniata co., Pa., for best Merino buck, 10

Cross Breed Sheep.

To Cyrus Miller, of Upper Leacock, Lancaster co., for best buck, 10

H. W. Hoffman,
James McKelvy,
A. T. Newbold,
Committee.

No. 15—Swine.

To James Gowen, President:—The Committee on Swine respectfully submit the following report.

To A. I. Jones, Harrisburg, for his Chester co. boar, over two years old, the first premium of $10

To I. G. Updegrove, Dauphin co., for the second best Chester co. boar, the second premium of 5

To Cyrus Miller, Upper Leacock, Lan. co., for his Native white boar, between one and two years old, the first premium of 10

To James Gowen, Mount Airy, Phila., for his white Berkshire boar, between one and two years old, the second premium of 5

To Cyrus Miller, Upper Leacock, Lancaster co., for his Native white boar, between six months and one year old, the first premium of 10

To A. J. Jones, Harrisburg, for his Chester co. breeding sow, over two years old, the second premium of 5

To James Gowen, Philadelphia, for his best white Berkshire sow, between one and two years old, the first premium of 10

To James Gowen, Philadelphia, for his second best white Berkshire sow, one year old, the second premium of 5

To Evans E. Green, Thornberry, Del. co., for a lot of pigs of the Chester co. breed, under six months old, the first premium of 10

To Benjamin Hickman, Thornberry, Del. co., for a lot of Chester co. pigs, the second premium of 5

To William Metzger, Harrisburg, for three best fat hogs, large breed, the first premium of 5

To William Metzger, Harrisburg, for his second best, two fat hogs, the second premium of 3

Your Committee would respectfully recommend to favorable notice a very fine lot of pigs of the Berkshire breed, exhibited by James Gowen, of Philadelphia. Also lots of

the Chester county Whites, exhibited by John W. Hickman, Russelville, Chester co., and John G. Taylor, Parkesville.

All of which is respectfully submitted.

THOMAS WOOD,
S. S. RUTHERFORD,
MOSES BRINTON,
Committee.

No. 16—POULTRY.

The Committee on Poultry, after a very thorough and minute examination of the large stock on exhibition, submit the following:

It has seldom been our privilege to witness so fine a show in this department. While a few of the specimens were comparatively worthless and unfit for exhibition, the large majority were of great excellence, and some of them truly remarkable. The stock exhibited by Dr. Crabb, Messrs. Gillespie, of West Philadelphia, Smith, Dorwart and others, were in condition to do them great credit as skilful and attentive breeders. Other birds of equal purity of blood seemed to be lacking in this respect, probably owing to want of range, or assiduous care on the part of the owners. We would earnestly enjoin upon exhibitors the necessity of presenting their fowls in cleanly and healthful condition at future shows. We have modified, to some extent, the premium list of the Society to suit circumstances. There were many beautiful varieties not enumerated, to omit mention of which would be unjust to the enterprising exhibitors.

Best Brahmas or Grey Shanghais over One Year Old.

To Dr. Jas. T. Crabb, West Philadelphia, $3
To John Smith, Harrisburg, second best, 2

Best Brahmas or Grey Shanghais under One Year Old.

To Jas. Gillespie, West Philadelphia, $3
To Dr. Jas. T. Crabb, West Philadelphia, second best, 2

Best Buff or Red Shanghais over One Year Old.

To Dr. Jas. T. Crabb, West Philadelphia, $3
To Jonathan Dorwart, Lancaster, second best, 2

Special premiums of $2 each to John Smith, Geo. W. Felix, Harrisburg, S. C. Radford, West Philadelphia.

Best Buff or Red Shanghais under One Year Old.

To John Smith, Harrisburg, $3
To Jas. Gillespie, West Philadelphia, second best, 2

Special premiums of $2 each to Jacob Rodabagh and Jacob Gross, Harrisburg.

Best White Shanghais over One Year Old.

To Dr. Jas. T. Crabb, West Philadelphia, $3
To Jonathan Dorwart, Lancaster, second best, 2

Best White Shanghais under One Year Old.

To Dr. Jas. T. Crabb, West Philadelphia, $3
To John Smith, Harrisburg, second best, 2

Best Poland Fowls.

To S. C. Radford, West Philadelphia, $3
To Jonathan Dorwart, Lancaster, second best, 2

Best Black Spanish over One Year Old.

To Jonathan Dorwart, Lancaster, $3
To S. C. Radford, West Philadelphia, second best, 2

Best Black Spanish under One Year Old.

To William Leonard, West Philadelphia, $3
To Jonathan Dorwart, Lancaster, second best, 2

Best Jersey Blues.

To S. C. Radford, West Philadelphia, $3

Best Bantums over One Year Old.

To S. C. Radford, West Philadelphia, $3
To Edward Lochman, York, Pa., second best, 2

Best Bantums under One Year Old.

To William Leonard, West Philadelphia, $3

Best Sumatra Games over One Year Old.

To Geo. W. Felix, Harrisburg, $3
To Dr. Jas. T. Crabb, West Philadelphia, 2

Best Sumatra Games under One Year Old.

To Albertus Welsh, York, $3
[These are of remarkable beauty.]
To Geo. W. Felix, Harrisburg, second best, 2
To Geo. W. McKee, Harrisburg, 2

Best Games, other than Sumatra, over One Year Old.

To Jonathan Dorwart, Lancaster, $3
To Geo. W. Felix, Harrisburg, second best, 2

Best Games, other than Sumatra, under One Year Old.

To Jonathan Dorwart, Lancaster, $3
To Geo. W. McKee, Harrisburg, second best, 2

Best Wild Indian Mountain Fowl (Semi-Game).

To Dr. Jas. T. Crabb, West Philadelphia, $3
To Wm. Leonard, West Philadelphia, second best, 2

Best Golden Spangled Hamburgs.

To Dr. J. T. Crabb, West Philadelphia, $3

Best Silver Spangled Hamburgs.

To Dr. Jas. T. Crabb, West Philadelphia, $3

Best Silver Penciled Hamburgs, Bolton Greys or Creoles.

To Dr. Jas. T. Crabb, West Philadelphia, $3
To Wm. Leonard, West Philadelphia, second best, 2

Best Silky Fowls of Japan.

To Dr. Jas. T. Crabb, West Philadelphia, $3
To Wm. Leonard, West Philadelphia, second best, 2

Best Frizzled Fowls.

To Wm. Leonard, West Philadelphia, $3

Best Dunghill Fowls.

To S. C. Radford, $3
[These were entered erroneously as Bucks County Fowls.]

Best Pair of Turkeys.

To Jonathan Dorwart, Lancaster, Pa., $3
To S. C. Radford, West Philadelphia, second best, 2

Best Bremen Geese.

To Jonathan Dorwart, Lancaster, $3

Best Hong Kong or Chinese.

To S. C. Radford, West Philadelphia, $3
To Albertus Welsh, York, Pa., second best, 2

Best Common Geese.

To J. M. Brubaker, Harrisburg, $2

Best Pea Fowls.

To William Leonard, West Philadelphia, $5

Best Musk Ducks.

To Jonathan Dorwart, Lancaster, $3

Best Puddle Ducks.

To S. C. Radford, West Philadelphia, $3
To S. C. Radford, West Philadelphia, second best, 2

Best Guinea Fowls.

To Albertus Welsh, York, Pa., $3

Best Lot of Poultry owned by Exhibitor.

To Dr. Jas. T. Crabb, West Philadelphia, $10

Largest Collection of Fowls.

To S. C. Radford, West Philadelphia, $10

Best Exhibition of Pigeons.

To Geo. W. Felix, Harrisburg, $5
To S. C. Radford, West Philadelphia, second best, 3

In addition to the above we recommend a special premium of $8 each to Jas. Gillespie, Albertus Welsh, Wm. Leonard and Jonathan Dorwart, and $5 each to John Smith, Geo. W. Felix and Geo. W. McKee, for the large collections of fowls exhibited by them. A special premium of $2 each to J. G. Updegrove and Wm. Leonard for ferrets. $2 to S. C. Radford for case of prepared fowls, $3 to Misses Brant and Long for two extraordinary hybrids between Turkey and Guinea Fowl, and $2 to Martin Goss for hybrid between Game

Cock and Guinea Fowls.—These are very interesting and strange looking monstrosities.—And $3 to John Smith for pretty show of Canary Birds.

David Taggart,
A. J. Jones,
Wm. F. Packer,
Committee.

No. 17—Plows and Plowing Match.

To James Gowen, President:—The Committee on Plows and Plowing, having performed the duties assigned them, beg leave to report—That the Committee were very much gratified with the numbers and excellent qualities of the plows exhibited. Especially the double Michigan Plow, they think is entitled to special notice for its thorough pulverizing qualities, and we believe it to be an implement that every farmer ought to be in possession of; and we award for it a silver medal to Henry Gilbert, the contributor. We would notice also J. S. Hall's steel plow, a new article that we think will very soon come into general use on account of its superior merits; we would therefore recommend a special premium of a bronze medal to J. S. Hall for it.

Plows.

To J. S. Hall, Pittsburg, for his iron plow, No. 19, the first premium of a silver medal.

To Hall & Spear, Pittsburg, for their iron centre plow, No. 10, the second premium of a bronze medal.

To Eph. Hoffman, Harrisburg, for Hoffman plow, the third premium of $5

To Samuel Plank, Cumberland co., for Plank cutter plow, the fourth premium of 3

Single Horse Plows.

To Boyer & Bro., Harrisburg, for Eagle plow, No. 2, steel point, a silver medal.

To Boyer & Bro., Harrisburg, for No. 1 Rich's patent plow, the second premium of a bronze medal.

Subsoil Plows.

To Paschall Morris & Co., for Prof. Mapes' steel lifting subsoil plow, the first premium of a silver medal.

To Boyer & Bro., Harrisburg, for 3 Roger's cast steel self-sharpening plows, the second premium of a bronze medal.

Corn Plows.

To Boyer & Bro., Harrisburg, for Lichtenthaler corn plow, the first premium of a silver medal.

To D. & H. Wolf, Lebanon, Pa., for their corn plow, the second premium of a bronze medal.

Side Hill Plows.

To Henry Herr, Harrisburg, for Hall & Spear's iron hill-side revolving beam plow, No. 11, the first premium of a silver medal.

To Paschall Morris & Co., Philadelphia, for Savery side-hill plow, the second premium of a bronze medal.

Plowmen.

To E. G. Gray, Harrisburg, with J. S. Hall's No. 17 plow, the first premium of $15

To Elias Books, Harrisburg, with Hall & Spear's No. 10 plow, the second premium of 10

To Henry Garverich, Harrisburg, with Hall & Spear's No. 10 plow, the third premium of 8

To Jacob Hite, Harrisburg, with double Michigan plow, and three horses, the fourth premium of 5

Plowboys under Eighteen Years Old.

To Henry Books, Harrisburg, with Hall and Spear's plow, No. 10, the first premium of $10

To Paschall Morris & Co., Philadelphia, for Hildreth's wheel gang plow, a special premium of a silver medal.

The Committee in conclusion would say that they were much gratified with the number of fine plows, plowmen and teams that competed, and particularly with the decorum and good order which prevailed during the whole trial. Every plowman gave evidence of thorough skill in the use of this important implement, and so close was the competition, that it was with difficulty the Committee were enabled to decide between them in the awarding of premiums. As a whole, the match was entirely satisfactory, both to the immense crowd in attendance, and to the Committee.

Wm. A. Ker,
Wm. Martin,
J. P. Rutherford,
John Murdock, Jr.
Hugh W. Robinson,
Committee.

No. 18—Farm Implements, No. 1.

To James Gowen, Esq., President of the Pennsylvania State Agricultural Society:—The undersigned Committee, No. 18, beg leave to make the following report and award of premiums.

To Thomas Castor, for best farm wagon, exhibited by Boyer & Bros., silver medal.

To Paschall Morris & Co., Philadelphia, for best hay drag, $5

To Boyer & Bros., Harrisburg, for second best hay drag, 3

To Paschall Morris & Co., for best square expanding harrow, 3

To Paschall Morris & Co., for second best harrow, 2

To Paschall Morris & Co., for best corn cultivator, (Knox's corn hoe,) silver medal.

To Paschall Morris & Co., for Peckham's expanding cultivator, $3

To A. P. Lionberger, Jacksontown, Ohio, for Vanhorn's wrought iron cultivator, bronze medal.

To Boyer & Bro., for harrow cultivator or gang plow, $5

To Boyer & Bros., for 2 horse harrow cultivator or gang plow, 3

To Paschall Morris & Co., for "Pennock's" improved slide grain drill and seed sower, (best,) silver medal.

To H. & A. Stoner, Lancaster, Pa., for second best grain drill and seed sower, "Moore's Patent," bronze medal.

To Edward Stacey, Strasburg, Lancaster co., for third best grain drill and seed sower, $5

To Wambaugh & Baker, York, Pa., for grain drill and seed sower, Hunt's patent, 5

To A. K. Bowers & Co., for grain drill and seed sower, (J. P. Ross,) 5

To Geddis Marsh & Co., Lewisburg, Union co., Pa., for J. P. Ross' grain drill without seed sower, silver medal.

The Committee have been greatly pleased with the exhibition of grain drills and seed sowers, and may venture to assure the farmers of Pennsylvania that the above, although differing in some respects, are reliable machines.

To J. Graham McFarland, Newville, Cumberland co., Pa., for improved iron corn planter, for planting in hills, (horse power,) silver medal.

To D. & H. Wolf, Lebanon, for corn and seed planter, in hills or drills, (horse power,) bronze medal.

To Boyer & Bro., Harrisburg, for Wren's corn planter, for hills and drills, diploma.

To McCaffey & Co., for improved corn planter, diploma.

To J. & H. Carothers, Blair co., Pa., for double corn planter, $5

To Wm. Morrison, Carlisle, Pa., for combined cultivator and planter, 3

To Paschall Morris & Co., Philadelphia, for "Malone's" double hand corn planter, 5

To Paschall Morris & Co., for "Boas'" steel tooth expanding cultivator, for general purposes, silver medal.
To Boyer & Bros., for expanding and reversable cultivator, for general purposes, bronze medal.
To Paschall Morris & Co., for "J. D. Willoughby's" rubber spring and brace for grain drills, silver medal.

The Committee would particularly call the attention of manufacturers of grain drills to Mr. Willoughby's patent rubber spring and brace noted above.

To J. C. Gaston, Reading, for best broad-cast seed sower, silver medal.
To Elijah Morgan, for second best improved broad cast seed sower, bronze medal.
To Boyer & Bros., for best field roller, silver medal.
To Paschall Morris, for best garden roller, $3
To Boyer & Bros., for second best garden roller, 2
To H. & A. Stoner, Lancaster, Pa., for best fanning mill and separator, silver medal.
To Samuel Keeler, Lancaster, Pa., for second best fanning mill and separator, bronze medal.
To L. P. Teed, White Deer, for fanning mill, $5
To Samuel Mohler, Cumberland, for fanning mill, diploma.

There were a large number of fanning mills on exhibition, a more careful examination of which would doubtless have shown good qualities in others not mentioned above.

To Paschall Morris & Co., for best corn stalk, hay and straw cutter, horse power, "Daniel's patent," silver medal.
To Boyer and Bros., for second best corn stalk, hay and straw cutter, Sinclair's, bronze medal.
To Paschall Morris & Co., for best hay, straw and fodder cutter, "Daniel's patent," hand power, silver medal.
To Boyer & Bros., for second best hay, straw and fodder cutter, "Seely's" patent, bronze medal.
To Paschall Morris & Co., for corn stalk crusher and cutter, horse power, "Pott's" patent, silver medal.
To Boyer & Bros., for second best corn stalk cutter and crusher, "Hunt's" patent, bronze medal.
To Boyer & Bros., for vegetable cutter, "Ruggles'," $5
To Jonathan Hibbs, Bristol, Pa., for best clover huller and cleaner, 10
To Boyer & Bros., for second best clover huller and cleaner, Hunsecker's, 5
To Boyer & Bros., for "Delano's" independent horse rake, silver medal.
To Paschall Morris & Co., for best revolving horse rake, bronze medal.
To Boyer & Bros., for man rake, diploma.
To Boyer & Bros., for "Rodger's" clover gatherer, $3
To Paschall Morris & Co., for best improved ox yoke, 5
To Boyer & Bros., for second best ox yoke, 3
To Boyer & Bros., for best corn sheller and cleaner, "Redding's" patent, horse power, silver medal.
To Boyer & Bros., for second best corn sheller and cleaner, "Major & Bros.'" patent, bronze medal.
To Paschall Morris & Co., for best hand power corn sheller, "Pennock's" improved, silver medal.
To Boyer & Bros., for second best hand power corn sheller, "Bower's," bronze medal.
To Boyer & Bros., for hand power corn sheller "Excelsior," $3
To Jacob Barnheisel, Elliott's gap, Perry co., for best hand corn sheller and separator, bronze medal.
To Boyer & Bros., for "Smith's" great western separator and cleaner, bronze medal.
To Boyer & Bros., for best farm and road scraper, $5
To Henry Gilbert, Harrisburg, for Sweet's patent root extractor and road scraper, 4
To Boyer & Bros., for sugar crusher and guano mill, Ruggles, Nourse, Mason & Co., 3
To Mount Joy Manufacturing Company, for cabbage cutter, bronze medal.
To Paschall Morris & Co., for best wheel barrow, Boaz, manufacturer, $5
To E. D. Snyder, Erie, for best rotary sausage machine, bronze medal.
To Boyer & Bros., for "Pott's" meat cutter, $3
To N. B. Harris, Camden, N. J., for hand hominy mill, diploma.
To Paschall Morris & Co., for hand cultivator and weeder, $3

The Committee with pleasure mention Joseph Like, Wm. H. Smith, Rufus Russel, J. P. Smith, Amos Hersh & Co., Gideon Peirce, S. C. Brinsers, and Sebastian Keller, as exhibitors of agricultural implements, and award them each five dollars. It is worthy of note that the display in this department was larger than in any other, and as this is desirable in consequence of the fact that the articles belong more peculiarily to the object the Society has in view, it would seem to be important that the Committee should be subdivided. Your Committee endeavored to look at every article, so that nothing should be omitted, but owing to the great variety, were unable to give that particular examination which they should have liked, and which perhaps some of them merited.

E. A. Sturdevant,
Edward C. Humes,
Joel Pusey,
Committee.

No. 19—Farm Implements, No. 2.

To the President of the Pennsylvania State Agricultural Society:—Committee No. 19 report that they have made the following awards and premiums; taking occasion to remark that it was with difficulty they were enabled to find some of the articles assigned for their examination, leading them at once to suggest, that hereafter the space assigned for implements of this character have for their accommodation, a building divided into three or four parts, according to the sub-divisions of the catalogue of premium, and that a gallery or space be designated for each, with their numbers, requiring all depositors to so arrange their articles, so that all would come under one roof. The display would be decidedly more attractive, and the comfort of Judges immeasurably enhanced.

The churn to which the first premium is awarded, is exhibited by Samuel Waring, of Franklinville, New York, Dickeson's improved thermometer; the merits of the one exhibited being simplicity of construction, combined with rapidity of work. The test applied was this—one gallon of sweet cream, one gallon new milk, exposed to the cool air for three hours, when placed in the churn, 10 degrees below the temperature proper to prepare milk for churning; butter was made and gathered in 10 minutes 55 seconds. The award was a silver medal.

To Paschall Morris & Co., Philadelphia, for the best display of Spain's atmospheric churns, bronze medal.
To A. Fink, Harrisburg, for a useful and well constructed churn, bronze medal.
To Boyer & Bro,, Harrisburg, for an excellent display of a variety of churns, diploma.

There was but a single cheese presss on exhibition. We do not consider it a first rate article, or such a one as the mechanical ingenuity of the country should produce. Under these circumstances we award to Paschall Morris & Co., by whom it was exhibited, a premium of $3
To Boyer Bro., Harrisburg, for 12 best milk pans, 3
To A. J. Tager, Harrisburg, for best potato mashers, diploma.
To Boyer & Bro., for best grain cradler, $2

To Paschall Morris & Co., for second best cradler, 1

To Boyer & Bro., Harrisburg, for the best cradle scythe, (Newton Darlington,) 2

To Paschall Morris & Co., Philadelphia, for the second best cradle scythe, 1

To Paschall Morris & Co., Philadelphia, for best snathe, diploma.

To Boyer & Bro., Harrisburg, for second best snathe, $2

These articles were of wood and iron, and highly meritorious.

To Paschall Morris & Co., Philadelphia, for 12 best hand rakes, $3

To Boyer & Bro., Harrisburg, for second best hand rakes, 1

The hay forks exhibited by Paschall Morris & Co., of Philadelphia, and Boyer & Bro., of Harrisburg, were of very equal merit. The finish was with the former, but the usefulness of the articles was equal. We award to each a diploma.

To Boyer & Bro., Harrisburg, for best grass scythes, diploma.

To Boyer & Bro., Harrisburg, for best grain scythes, diploma.

To Paschall Morris & Co., Philadelphia, for best axes, diploma.

To Boyer & Bro., Harrisburg, for best manure forks, diploma.

The canal shovels exhibited by Messrs. Henry Gilbert, of Harrisburg, Paschall Morris & Co., of Philadelphia, and Boyer & Bro., of Harrisburg, we adjudge of equal merits, except in finish, which we think in favor of those of Mr. Gilbert. We award to each a diploma.

To Paschall Morris & Co., for 6 best draining spades, a very superior and meritorious article, of superb finish, and well balanced for use, silver medal.

To Boyer & Bro., for best ordinary spades, $3

To Paschall Morris & Co., for best set hoes, 3

To Boyer & Bro., for second best set hoes, 2

Best horse shoes; the only ones that exhibited any ingenuity, or to which a new principle was introduced, was by W. H. Towers, Philadelphia, to whom the first premium is awarded, $3

To Lewis Young, Cumberland co., for second best ordinary horse shoes and nails, 1

To Paschall Morris & Co., Philadelphia, for best set grain measures, 3

To Boyer & Bro., for second best set grain measures, 2

To Paschall Morris & Co., Philadelphia, for best set corn baskets, 3

To Wm. F. Shetter, York, for best hames, diploma.

To Boyer & Bro., Harrisburg, for best grain shovels, $3

To Boyer & Bro., Harrisburg, for best display of horticultural implements, well arranged and of commendable construction, silver medal.

To S. C. Brinzer, Middletown, Dauphin co., for horse rake, which came under our observation, diploma.

The Committee have taken occasion to depart in several instances from the schedule of premiums, because they found it impossible in the mass of articles numbered 17, 18, 19 and 20, unassorted as they were, to make the discrimination designed by the Society.

This Committee deem it proper to recommend that in future exhibitions a permanent and comfortable structure be erected for the accommodation of the Judges, furnished in such manner as will enable gentlemen who have an onerous, tiresome and vexatious labor, to perform their tasks with a certain degree of comfort, which, under the present system, it is impossible to do, where it ought to be done upon the spot where the articles are exhibited.

THOMAS P. KNOX,
A. BOYD HAMILTON,
W. W. DALE,
DANIEL HERR,
Committee.

No. 20—FARM IMPLEMENTS AND MACHINERY.

To James Gowen, Esq., President of the Pennsylvania State Agricultural Society:—The undersigned, being appointed Judges to award premiums on articles enumerated in No. 20, Class 5, respectfully report—That they have carefully examined the articles submitted to their inspection, and have awarded premiums, medals and diplomas as follows:

To Thomas B. Woodward, Philadelphia, for portable mill, a premium of $20

To A. L. Archambault, Philadelphia, for portable saw-mill engine, silver medal and $20

To Jacob S. Roads, Elizabethtown, Lan. co., for daughter, washing machine, bronze medal.

To Ira N. Frame, Dauphin co., washing machine, diploma.

To Anthony Fink, Harrisburg, for beer hogshead and vinegar cask, (without hoops,) for their novelty, diploma.

To Senseman & Hauck, Mechanicsburg, Cum. co., 4 horse sweep power and thresher, bronze medal.

To Boyer & Bro., Harrisburg, for best sweep horse power, (Woodbury's patent,) $10

To Boyer & Bro., for best separator and winnower, silver medal.

To Wilson & McCullough, Harrisburg, for 6 best flour barrels, silver medal.

To Daniel Drawbaugh, Eberly's mills, Cum. co., for stave cutter and jointer, silver medal.

To Mount Joy Manufacturing Co., John Keller, Supt., reaping machine, diploma.

To Mount Joy Manufacturing Co., John Keller, Supt., for horse power and thresher, for the fine finish, silver medal.

To S. M. Mechutchen, Philadelphia, for sechnd best portable mill for grain, silver medal.

To Samuel Moore, Philadelphia, apple parers, received favorable notice.

To George J. Lenk, Philadelphia, terra cotta water drain and heating pipes, silver medal.

[These appear to be an excellent article.]

To Emory Brothers, Albany, N. Y., for railway horse power, diploma.

To Emory Brothers, Albany, N. Y., for cider mill and press, for the press, silver medal.

To Henry Gilbert, Harrisburg, for 3 ice cream freezers, of superior usefulness, and worthy of especial notice, silver medal.

To Henry Herr, Harrisburg, for Atkin's automaton or self raking reaper and mower, silver medal.

To W. O. Hickok, Harrisburg, for cider mill and press, and cider press, diploma.

To F. & P. S. Bush, Christiana, Lan. co., one lime and one guano spreader, diploma.

To Wanbaugh & Baker, York, Pa., for shingle machine, operated by circular saw, bronze medal.

To Ross Scott & Co., Philadelphia, for nimble giant portable power mill for farmers, silver medal.

To same, for little giant portable grain and cob crusher, bronze medal.

To W. Field, Wilmington, Del., hydraulic ram, silver medal.

To Deitz & Dunham, Somerville, N. J., improved cam power mowing and reaping machine, deserving especial notice, bronze medal.

To Deitz & Dunham, Somerville, N. J., improved cam power mower, deserving notice.

To Richard H. Peas, Albany, entered by John Gernon, Excelsior horse power and thresher, $5

To Paschall Morris & Co., Philadelphia, for display of cooper ware, silver medal.

To Paschall Morris & Co., Philadelphia, for power churn, deserves favorable notice, 5

To John W. Hickman, Russellville, Chester co., guano spreader attached to plow—not seeing it in operation, cannot decide on its merits.

To John Hutton, for Harris' vegetable and cider mill—a good article.

To John Hutton, for Filson's farm gate, silver medal.

To W. W. Dingee & Co., York, Pa., for portable hay press, bronze medal.

To Boyer & Bro., Harrisburg, for Allen's automaton reaper and mower, worked by cam, bronze medal.

To Henry Loyer, Erie, Pa., for Leavitt's improved crusher and grinder, diploma.

To Henry Gilbert, for 2 boring machines, bronze medal.

To H. H. Beach, York, Pa., grain separator and winnower, bronze medal.

To Wm. Rowan, Freesport, Armstrong co., grain separator, diploma.

To V. B. Orr, Lancaster, entered by S. R. King, for shingle machine and stave splitter, deserving special notice, silver medal.

To Abbott & Co., Philadelphia, for best hay and cattle scales, silver medal.

To Boyer & Brother, Harrisburg, best display of large and small scales, 5

To R. D. Granger, corn and cob mill, silver medal.

To Keller & Brother, Harrisburg, two small platform scales, diploma.

To Paschall Morris & Co., Philadelphia, for Krauser's Portable Cider and wine power-mill, silver medal.

To Boyer & Brother, Harrisburg, dog-power, for churn and grindstone, $5

To Wm. Kirkpatrick, Lancaster, four horse-power and thresher, Burrell's patent, bronze medal.

To Lewis Cooper, Lancaster co., entered by Boyer & Brother, lime and guano spreader, silver medal.

To Alexander Major, Lebanon, railway horse power and thresher, $10

To Boyer and Brother, Harrisburg, Hussey's Reaper and mower, Huyett's reaper and mower, Allen's mower Burrell's reaper and mower—These are all deserving of notice, but not seeing them in operation, the committee did not feel at liberty to make any distinction.

To Paschall Morris & Co., Philadelphia, Manny's reaper and mower, Danforth's iron reaper and mower—Deserve special notice.

To Boyer & Brother, five large boilers for farm purposes —Worthy of special notice.

To Boyer & Brother, Harrisburg, for the BEST display of agricultural and horticultural implements, a diploma and $25

The display by Messss. Boyer & Brother is a magnificent exhibition of usefulness and beauty, highly creditable to the exhibitors.

To Paschall Morris & Co., Philadelphia, the second best display of agricultural and horticultural implements, a diploma and $20

This is a beautiful display and the exhibitors deserve much credit for the great number and quality of the articles on exhibition.

To Boyer & Brother, for Wardrop's drain tiles, 3
Temple's boring machine for farm purposes, diploma.

To Paschall Morris & Co., chest of farmers tools, 5

To Root & Case, York, Pa., entered by Boyer & Brother large cattle and hay scales. These, with others of the same manufacture, deserve special notice and a diploma.

There were a number of sweep horse powers, besides those already noticed, but there being nothing new or peculiar in their construction your committee deem them to be good machines.

If any omission has occurred the committee would attribute it to the difficulty in finding many of the exhibitors and to the heterogeneous manner in which articles intended for the inspection of committees 18, 19 and 20 were numbered and mixed. The undersigned would respectfully suggest, that hereafter, a suitable building be erected, with three or more apartments properly numbered, and articles of this class could then be numbered and placed each in its proper apartment. Also that there should be a committee whose sole duty it would be to inspect horse powers and threshers —one for reapers and mowers—one for corn shellers, &c. Such an arrangement would render the present irksome and vexatious duties of the committees an easy and agreeable task.

DAVID COCKLEY,
JOHN C. CRESSON,
THOS. WALTER, JR.,
JAMES MCKEEHAN,
Committee.

No. 21.—LEATHER AND ITS MANUFACTRES.

To James Gowen, Esq., President:—The undersigned being appointed Judges to award premiums on the articles enumerated in No. 21, respectfully report, that they have carefully examined the articles submitted to their inspection, and have awarded

To Samuel Hurton, of Hogestown, Cumberland co., for the best wagon harness, a premium of $5

To Alexander L. Hickey, of Philadelphia, for the best travelling trunk, a silver medal.

To James R. Pugh, of Harrisburg, for a lot of leather belting, a diploma.

To J. B. & G. M. Brownberger, of Harrisburg, the best men and women's saddles and bridles, a bronze medal.

Mr. Brownberger exhibits a saddle, which, with a slight alteration, easily effected, makes a neat and convenient saddle for gentlemen or ladies, as may be required. He also exhibited two Scotch collars, and a harness bridle, so constructed as to prevent the horse from seeing any object behind him, both of which are worthy of the attention of the public, but not being especially enumerated the committee did not feel themselves justified in awarding a premium therefor.

To David Addison, Shippensburg, for the best wagon whips, a premium of $5

To William McLean, of Shippensburg, for the best side of sole leather, a diploma.

To John Clendenin, of Hogestown, Cumberland co., for the second best sole and harness leather, a premium of $5

To J. H. Hummel, of Philadelphia, for the best lot of fancy colored morocco leather, a diploma.

To G. S. Adler, of Philadelphia, for the best lot of Tampico French morocco and other leather of that description, a diploma.
For the second best lot of fancy colored morocco leather, a premium of $5

To Henry C. Locher, of Lancaster, for the second best lot of Tampico French morocco, and other leather of that description, a premium of $5

To X. Miller, of Harrisburg, for the best lot of men, women and children's boots and shoes, a diploma.

To E. J. Unger, of Harrisburg, for the best plow gears, a premium of $5

To George B. Lindemuth, of Lebanon, for the second best double harness, a premium of $3

To Henry M. Crawford, of Philadelphia, for a lot of calf skins in the rough, a diploma.

To Adam Weingartoner, of York, for the best calf skins dressed, a diploma.

To same, for the best waxed, buff and upper leather, a premium of $5

To S. S. Armstrong, of Philadelphia, for the best skirting and harness leather, a diploma.

To J. & J. K. Greenawalt, of Harrisburg, for the second best calf skins, dressed, a premium of $5

To same, for the best bridle leather, a diploma.

It is due to Mr. Greenawalt to add, that he exhibited specimens of several other kinds of leather which do him much credit as a manufacturer.

Lacey & Philips, of Philadelphia—Those gentlemen exhibit a very superior and splendid lot of carriage harness, buggy harness, and men and women's saddles, for each of which, in the judgment of the committee, they would be entitled to a diploma, but in consideration of the extent, variety, and superior finish and workmanship of the articles, highly creditable to the exhibition, as well as to the contributors, the committee would respectfully recommend that, if not inconsistent with the rules and regulations of the society, there should be awarded to Lacey & Philips, for carriage harness, buggy harness, and men and women's saddles, exhibited by them, a silver medal.

The committee were highly pleased to find that in the article of leather, and articles manufactured of leather, there was a spirited competition, and specimens of various kinds not enumerated in the premium list were exhibited, and in some, the difference in quality was so slight as to render it very difficult to decide which was justly entitled to the preference. The committee anxious to do justice to all parties concerned, have carefully considered the merits of each of the articles brought under their notice, and, as the conclusion to which their deliberations led them, respectfully submit this report.

P. McIntyre,
D. Brautigam,
John Stronm,
Committee.

No. 22.—Dairy, Sugar and Honey.

To James Gowen, Esq., President:—The committee on dairy products, honey and sugar, report that the exhibition was not so large as desirable for so important a branch of agriculture. The probable annual value of the dairy products of the State is about eight millions of dollars, and is constantly increasing. The prices of butter and cheese have nearly doubled within the last five years and are now so high as to increase the importance of these indispensable articles. In some of our cities within a year, fine fresh butter has been sold at forty and more cents per pound, and a very short supply of the article at that or any price. In some large towns in the months of February and March, no good butter is to be had. It is believed however, that the time is not far distant, when from all parts of the State, there will be such a demand for pure sweet butter, that the art of preservation will be studied more, and supplies of butter be obtained in the proper season which will retain their fragrance through the year. This subject demands the attention of all who keep dairies either for home consumption or for the market.

The committee therefore recommend this subject to the earnest consideration of all dairymen, and hope that at the next Fair we may have an exhibition of butter of a year old and more, which still retains its freshness and fragrance. Butter is put up for the Navy and for the foreign merchant service which remain good for years, and such ought to be exhibited at our Fairs.

The committee award the premiums as follows:

To Job Hayes, of Chester co., for the best lot of 10 pounds of butter, parcel of that made from five cows in thirty days—whole quanty 173 pounds, a silver cream pot.

To W. Jessup, for second best do. for twenty days, from five cows, 108 pounds, a silver cup.

To Sarah J. Logan, of Chester co., for the best 20 pounds of butter made in June, a silver goblet.

To Mrs. Jacob Decher, Susquehanna co., for the best 10 pounds butter made at any time, a silver goblet.

To Sarah J. Logan, of Chester co., for second best, do. a silver cup.

To Jacob M. Decker, Susquehanna co., for best firkin of butter, a silver goblet.

To Miss Hannah Mary Hayes, of Chester co., for best lot of butter made by girls under twenty-one years of age, a silver goblet.

This last lot of butter was elegantly made, and does great credit to Miss Hays' skill and neatness. It was not only delightful to the taste but the eye was also delighted by its beauty. It went from the Fair to adorn the table of the President of the United States.

To John Houch, of ———, for the best five pounds of butter, a set of silver tea spoons.

The exhibition of cheese was confined to Mr. Job Hayes and Miss Hayes, and the premiums are awarded

To Job Hayes for best 50 lbs. of cheese, one year old, a silver medal.

To Miss H. M. Hayes for second best, $5

To Miss Hannah Mary Hayes for best 50 lbs. cheese made this year, a silver medal.

To Job Hayes for best dairy of cheese from one county, $20

To John Young, Harrisburg, for the best 10 lbs. of honey, 5

Wm. Jessup,
John McWilliams,
John Williamson,
Committee.

Statements Relative to Cheese and Butter.

Susquehanna county, ss:

Before me, the subscriber, one of the Justices in and for said county, personally came Jacob M. Decker, who, being duly sworn, doth depose and say, that in pursuance of the requirements of the Pennsylvania State Agricultural Society, he did upon the 29th day of August, 1855, set apart and keep separate the milk of five cows from the residue of the dairy, and for the twenty days next following did churn the milk of the same five cows, and obtained from it the amount of one hundred and eight and one-half pounds of butter, a sample of which has been forwarded to the Secretary of the State Society; the cows belonging to Judge Jessup, of Montrose. The ages and stock of said five cows are as follows: one nine years, two seven years, one five years, and one four years of age, and all about three-fourths Durham blood. Jacob M. Decker.

Sworn and subscribed, Sept. 24th, 1855.

A. Chamberlin, J. P.

The cows milked on the farm of William Jessup are grades of Durham, one of nine years old, two of seven years old, one of five years old, and one of four years

old. The time was from 29th August for twenty days. The cows all calved early in the spring, and the yield was not more than the average of the whole milking season. The cows were fed upon grass and a small quantity of green corn stalks. The quantity was one pound three ounces per day, or one hundred and eight and one-half pounds for the five cows in twenty days. The whole dairy of thirteen cows would average nearly the same for the season.

The milk was churned by a dog-churn, and the process is the same as that reported at vol. 1, page , of the Society's Transactions. WM. JESSUP.

The cheese exhibited by Job Hayes, of Chester county, made in July and August, from a dairy of thirty cows. The cheese made from two milkings, and no additional cream; one rennet steeped in half gallon of water, with salt sufficient to preserve it, adding one pint to twenty gallons of milk, then placed in a vat and pressed under a pressure of about seven hundred pounds weight, remaining in press forty-eight hours, and turned twice a day, then kept in a warm dry place and turned every day. Add two pounds of salt to one hundred pounds.

JOB HAYES.

I do hereby certify that five cows of my dairy made in thirty consecutive days one hundred and seventy-three pounds of butter, and had no extra feed. JOB HAYES.

We, the undersigned, assisted in milking and making the above, and believe it to be correct.

E. D. BROWN,
Sept. 25th, 1855. S. A. BAILY.

RECEIPT FOR MAKING BUTTER.

After the milk is drawn from the cows, placed in the spring in the pans, remain thirty-six hours, then skimmed. Churned twice each week, butter taken from churn, and buttermilk worked out, then salted, remain about twelve hours, then worked over by one of Dickey's patent butter workers, then printed for market, adding half ounce to the pound of good dairy salt.

JOB & HANNAH MARY HAYES.

The cheese here exhibited by Hannah M. Hayes, of Chester county, was made in July, 1855, of two milkings, no additional cream; rennet prepared by steeping one in half gallon of water, with sufficient salt to preserve it. Pressed in common screw press, with about seven hundred weight to fifty pounds of cheese.

No. 23—FLOUR AND CORN MEAL.

To James Gowen, Esq., President:—The undersigned, members of the Committee on Flour, Corn Meal, &c., report, that in the absence of Messrs. Small, McCully and Snavely, Mr. John S. Isett, of Huntingdon county, was added to the Committee, after which they proceeded to discharge their duties. There was not presented for their examination so great a variety of the different articles, upon the merits of which it became their duty to decide, as they could have desired; or as properly represented the resources and inventive capacity of the Commonwealth. There were five or six brands of flour deposited for their inspection, the quality of which was generally of a very superior character. Two of the undersigned were of opinion, that (owing to its having been manufactured out of old wheat, which gave him a decided advantage,) the barrel of flour deposited by Mr. John Nelson, of Blair county, Pa., was slightly preferable to the next sample named, and accordingly award to him a Silver Medal. They also award to Messrs. Wilson and McCullough, of Harrisburg, a Silver Medal, for the best barrel of flour manufactured from new wheat; one of your committee conceives the latter sample to be better than the former. For the third best barrel, they award a Bronze Medal to Mr. J. S. Haldeman, of Shiremanstown, Cumberland county, Pa. They would recommend that in future competitors be required to manufacture their samples from wheat of the current year. They award to George H. Bucher, Esq., of Hogestown, a Silver Medal, for best barrel corn meal. They award a Silver Medal to Mr. Henry Becker, of Harrisburg, for the best five loaves of bakers' bread, and a Diploma to Mr. Curry Taylor, of the same place, for the second best. Both the above samples are very superior, and were manufactured from the flour of Messrs. Wilson & McCullough, of Harrisburg. Their attention was called to several valuable and ingenious smut and screening machines, either of which deserves honorable notice, and would prove an invaluable acquisition to the manufacturer of flour. They award the first premium, a Silver Medal, to Thomas H. Wilson & Co., of Harrisburg, for best smut machine, and a Bronze Medal for the second best to Mr. S. M. McCutcheon, of Philadelphia. Within the last few years, it was discovered that under the old system of bolting a considerable quantity of flour adhered to bran that formerly was supposed to have been perfectly dressed. The ingenuity of our countrymen furnished a number of machines for remedying this defect in milling operations, several of which were exhibited to your Committee, and gave promise of adding largely to the proportion of flour manufactured from a given quantity of wheat. The list unfortunately, as we think, does not provide for premiums to that class of machinery. Should the rules and means of the Society justify it, we advise special premiums as follows: to Thos. H. Wilson & Co., of Harrisburg, for "the World's Challenging Bran Duster," a Silver Medal; and to M. Beidler & S. S. Levis, of Indiana, a Bronze Medal, for the second best. It is to be regretted that the price of these articles, ranging as they do from $150 to $250, precludes their general introduction. We trust that some of our enterprising countrymen will speedily furnish a machine, combining all the advantages of those to which we have called attention, with such a price as will place it within the reach of mills of small capacity. Mr. Wilson Ager, of Rhorersburg, Columbia county, furnished a superior sample of buckwheat meal; and Mr. C. L. Wampole, of Oakland Place, Montgomery county, deposited a very excellent article of rye flour. Both these samples excel any thing in their line that has ever come under our observation, and we cordially recommend a diploma to each of the exhibitors.

Respectfully yours,
STEPHEN MILLER,
CHARLES PORTER,
JOHN S. ISETT,
Committee.

No. 24—Grain and Seed.

To James Gowen, President:—The Committee on Grain and Grass Seeds submit the following report:

To Henry Cesel, Harrisburg, for the best bushel red blue stem wheat, $3
To John Bachman, Harrisburg, for the best bushel white blue stem wheat, 3
To David Deitz, Harrisburg, for second best bushel white blue stem wheat, 1
To Eli Logan, Unionville, Chester co., for best Mediterranean wheat, 3
To George H. Bucher, Hogestown, for second best Mediterranean wheat, 1
To A. W. Milleisen, Harrisburg, for Long Island wheat, special premium, 2
To S. J. Kash, Mechanicsburg, for orange white wheat, special premium, 2
To S. J. Kash, Mechanicsburg, for white Mediterranean wheat, special premium, 2
To C. L. Wampole, Oakland Place, Mont. co., for best bushel rye, 3
To H. W. Hoffman, Harrisburg, for second best bushel rye, 1
To C. L. Wampole, Oakland Place, for best bushel oats, 3
To Jacob Hite, Harrisburg, for best bushel yellow ground corn, 3
To Peter Brenner, Harrisburg, for second best bushel yellow ground corn, 1
To Jacob Hite, Harrisburg, for best bushel Tuscarora corn, special premium, 2
To George Olwine, Harrisburg, for best bushel yellow corn, special premium, 2
To P. Brenner, Harrisburg, for best 3 stalks of corn, special premium, 1
To S. C. Radford, West Philadelphia, for best lot of sweet corn, special premium, 2
To Dr. James T. Crabb, West Philadelphia, for 2 stalks Cuba sweet corn, special premium, 1
To J. E. Fisler, Harrisburg, for best bushel of barley, 3
To Elias Garbewich, Harrisburg, for best bushel Irish potatoes, 3
To Jacob Hite, Harrisburg, for second best bushel Irish potatoes, 1
To Samuel Deal, Harrisburg, for black mercer potatoes, special premium, 2
To Wm. Hummell, for black mercer pototoes, special premium, 2
To Jacob Hite, Harrisburg, for Bermuda potatoes, special premium, 2
To Jacob F. Laurer, Harrisburg, for best bushel sweet potatoes, 3
To George Reel, Harrisburg, for second best bushel sweet potatoes, 1
To Thomas Wood, Penningtonville, for best bushel field turnips, 3
To Job Hayes, Embreeville, Chester co., for best bushel timothy seed, 3
To John Akers, Rosehill, Bedford co., for second best bushel timothy seed, 1
To Wilson Ager, for lot of hulled buckwheat, special premium, 1
To Dr. S. Keller, Elizabethtown, for a cabinet of seeds, containing about 600 varieties, silver medal.

All of which we respectfully submit.

Daniel C. Getty,
Aaron McClure,
David Evans,
Committee.

No. 25—Vegetables.

The Committee on Vegetables beg leave to report—That having examined the different vegetables on exhibition, they have awarded the following premiums:

To H. W. Hoffman, Harrisburg, for the 12 best stalks of celery, $3
To Jacob Mish, Harrisburg, for the 12 second best stalks of celery, 2
To Thomas Wood, Penningtonville, Penna., for the 12 best white table turnips, 3
To Chris. Hummell, Harrisburg, for the second best white table turnips, 2
To A. J. Jones, Harrisburg, for the 12 best carrots, 3
To John Wetzell, Swatara, for the second best carrots, 2
To John Wetzell, Swatara, for the 12 best beets, 3
To J. E. Fisher, Harrisburg, for the second best beets, 2
To Jacob Hite, Harrisburg, for the 12 best parsnips, 3
To John Wetzell, Swatara, for the second best parsnips, 2
To Juliet Bennett, West Chester, for the 12 best onions, 3
To John Wetsell, Swatara, for the second best onions, 2
To J. Bankers, Harrisburg, for the 6 best heads of cabbage, 3
To William Hummell, Harrisburg, for the second best heads of cabbage, 2
To Abram Bates, Harrisburg, for the 12 best tomatoes, 3
To Wm. Hummell, Harrisburg, for the second best tomatoes, 2
To R. Buist, Philadelphia, for the 2 best purple egg plants, 3
To A. S. Henderson, Pequea, for the second best purple egg plants, 1
To Jacob F. Laurer, Harrisburg, for the 12 best sweet potatoes, 3
To George Reel and John Reel, Harrisburg, for the second best sweet potatoes, 2
To Jacob Mish, Harrisburg, for the best half peck lima beans, 3
To Samuel Deal, Harrisburg, for the second best half peck lima beans, 2
To Mrs. Matilda B. Thomas, West Chester, for the best bunch double parsley, 2
To Jacob Hite, Harrisburg, for the second best bunch double parsley, 1
To H. W. Hoffman, Harrisburg, for the 3 best garden squashes, 3
To A. J. Jones, Harrisburg, for the second best garden squashes, 2
To A. J. Jones, Harrisburg, for the 3 best large squashes, 3
To John M. Shech, Harrisburg, for the second best large squashes, 2
To Abram Bates, Harrisburg, for the 3 largest sweet pumpkins, 3
To H. W. Hoffman, Harrisburg, for the second largest sweet pumpkins, 2
To John Bankers, Harrisburg, for the 3 largest field pumpkins, 3
To Jacob Hite, Harrisburg, for the second largest field pumpkins, 2
To Benj. Hinchman, West Chester, for the 12 best ears yellow seed corn, 3
To Jacob Hite, Harrisburg, for the second best yellow seed corn, $2
To Samuel Deal, Harrisburg, for the twelve best ears white seed corn, 3
To A. J. Jones, Harrisburg, for the second best do. 2
To Elias Garbrich, Susquehanna, for the best twelve table potatoes, 3
To Jacob Hite, Harrisburg, for the second best do. 2
To Jacob Hite, Harrisburg, for the choicest and largest assortment of table vegetables, 10

To Jacob Mish, Harrisburg, for the second best do. 5

The committee also recommend the following premiums:

To John D. Warren, Harrisburg, for a lot of wild premium potatoes, 2

To John Olwein, Harrisburg, for a very fine lot of Mercer potatoes, 2

To Wm. T. Verbeke, Harrisburg, for a specimen of sugar cane on the stalk, 2

We have only to add that the display of vegetables was highly creditable to the contributors and the Society.

John C. Knox,
David Coble,
Timothy Ives,
Committee.

No. 26.—Domestic and Household Manufactures.

To the President of the Penna. Society, your committee on No. 26, Domestic and Household Manufactures, make the following awards:

To Miss Harriett Summy, Manheim, Lancaster co., for the best lot of silk cocoons, silver cup.

To same, for best specimen of reeled silk, silver cup.

To same, for best specimen of raw silk, silver cup.

To same, for best specimen of sewing silk, silver cup.

To same, best pair of silk stockings, $5

To Mrs. Geo. H. Bucher, Hogestown, Pa., for best pair of woolen blankets, silver cup.

To S. J. Logan, of Unionville, Chester co., second best pair of woolen blankets, $5

To Mrs. Job Hayes, Embresville, Chester co., for third best pair of woolen blankets, 3

To Mrs. Susan E. Hassinger, Harrisburg, best 10 yards of woolen cloth, 5

To J. D. Updegrove, Susquehanna, best 15 yards of woolen carpet, silver cup.

To Mrs. Ann Rutherford, Dauphin co., second best 15 yards of woolen carpet, $8

To Christian Snavely, Harrisburg, best rag carpet, 15 yards, 5

To Mrs. F. L. Hutter, Harrisburg, second best rag carpet 15 yards, 3

To Mrs. Swager, Harrisburg, third best rag carpet, 15 yards, 2

To Miss Hannah M. Hayes, Embresville, Chester co., best double coverlet, 5

To S. J. Logan, Unionville, Chester co., second best double woolen coverlet, 3

To Mrs. Harriet Withrow, West Chester, for third best double woolen coverlet, 2

To Mrs. S. E. Wallace, Harrisburg, best pair woolen knit stockings, 3

To Mrs. Ann Rutherford, Dauphin co., second best pair of woolen knit stockings, 2

To Miss Juliet Bennett, West Chester, third best pair of woolen knit stockings, 1

The committee would recommend a special premium of $2 each, to Mrs. G. P. Wiestling, Harrisburg, Miss Mary Clendenin, Hogestown, Cumberland co., Mrs. E. Cassel, Dauphin co., and Matilda B. Thomas, West Chester, for fine knit woolen stockings.

To the State Lunatic Hospital for the best pair woolen knit half hose, $3

To John Akers, Red Hill, Chester co., for second best pair woolen knit half hose, 2

To Matilda B. Thomas, West Chester, for best pair woolen knit mittens, 2

To Mrs. E. Cassel, Dauphin co., for second best pair woolen knit mittens, 1

To Anna Maria Colestock, Harrisburg, for 12 pairs woolen knit children's socks, a special premium, 5

To Mrs. Mary Hooper, Harrisburg, for best home made shirt, 5

To Mrs. Salome R. Snider, Harrisburg, for second best home made shirt, 3

The committee recommend a premium of $3 each, to Anna Maria Colestock, Harrisburg; Margaret Cunkle, Harrisburg; Miss Eliza Foster, Dauphin, Pa.; Mrs. Harriet Withrow, West Chester, for fine shirts; and to America Sheperd, (nine years old) for a small shirt, $1.

To S. J. Logan, Unionville, Chester co., for best plain flannel, 12 yards, silver cup.

To Mrs. E. Cassel, Dauphin co., for best 10 yards barred linen, silver cup.

To Mrs. Caroline Buehler, Harrisburg, for best 10 yards plain linen, silver cup.

To Mrs. H. Longenecker, Shepherdstown, Cumberland co., for second best 10 yards plain linen, $3

To Mrs. Harriett Withrow, West Chester, for third best 10 yards plain linen, 2

To S. J. Logan, Unionville, Chester co., for best 10 yards linen diaper, silver cup.

To Mrs. Harriet Withrow, West Chester, for second best 10 yards linen diaper, $3

To Matilda B. Thomas, West Chester, for third best 10 yards linen diaper, 2

To Mrs. E. Cassel, Dauphin co., for linen diaper, a special premium of 2

To S. J. Logan, Unionville, Chester co., for best 10 yards tow cloth, silver cup.

To State Lunatic Hospital, for best pair cotton knit half hose, $3

To Mrs. Caroline Buehler, Harrisburg, for fine cotton knit stockings, a special premium of 3

To State Lunatic Hospital, for cotton knit stocking, a special premium, 2

To S. J. Logan, Unionville, Chester co., for best pair linen knit stockings, 3

To Mrs. E. Cassel, Daupin co., for best pound linen sewing thread, silver cup.

To John Akers, Red Hill, Bedford co., for second best pound linen sewing thread, $3

To Mrs. E. W. Small, Harrisburg, for best ornamental needle work, 5

To Abraham Dehuff, York, for second best ornamental needle work, 3

To Miss Fanny Foltz, for third best ornamental needle work, 2

Special Premiums on Muslin Work.

To Miss Julia Brooks, Harrisburg, for best needle work, $5

To Miss Emma Dull, Harrisburg, for second best needle work, 3

To Miss S. A. Bryant, for best ottomen covers, 3

To Mrs. Gross, for second best ottomen covers, 2

To Mrs. Lydia Smith, Lancaster, for best piano covers, 3

To Matilda B. Thomas, West Chester, for best artificial flowers, 3

To Miss Maria J. Stroman, Harrisburg, for second best artificial flowers, 2

To Mrs. Speck, Dauphin co., for best variety of worsted work, 5

To Rebecca and Mary E. Till, for second best worsted work, 3

A case of plain and fancy needle work, made by the patients of the Pennsylvania State Lunatic Hospital, is worthy of favorable notice.

To Mrs. Charlotte L. Greene, Philadelphia, for best needle work picture, special premium, $5
To Mrs. Wagner, for needle work picture, 5
To Miss Ellen Bucher, Harrisburg, for travelling bag and fancy quilt, special premium, 3
To Mrs. Rebecca E. Kinzer, San Francisco, California, for best worked cushion and back, 3
To Mrs. Elizabeth L. Martin, Carlisle, for second best cushion and back, 2
To Mrs. Elmira Duncan, Harrisburg, for best fancy needle worked chair, 3
To Mrs. J. R. Eby, Harrisburg, for second best fancy needle worked chair, 2
To Miss Rebecca Wilt, Harrisburg, for needle worked stool cover, a special premium of 2
To Matilda B. Thomas, West Chester, for best silk quilt, silver cup.
To Mrs. A. B. Warford, Harrisburg, for second best silk quilt, $5
To Miss Jane Reed, Harrisburg, for third best silk quilt, 3
To Mrs. Margaret Metzgar, Harrisburg, for best plain white quilt, silver cup.
To Mrs. Sarah E. Wallace, Harrisburg, for second best plain white quilt, $5
To Mrs. P. Coleman, Harrisburg, for best fancy quilt, silver cup.
To Miss Margaret Kunckle, Harrisburg, for second best fancy quilt, $5
To Mrs. P. Coleman, Harrisburg, for third best fancy quilt, 3
To Matilda B. Thomas, West Chester, for best lamp mats, 3
To Miss Bella Sayford, Harrisburg, for second best lamp mats, 2
To Mrs. M. Royer, Philadelphia, for best ornamental shell work, $3, one specimen of which is to be presented to the State Lunatic Hospital.
To Henry P. Rodarmel, Harrisburg, for second best ornamental shell work, 2
The Committee take great pleasure in expressing their admiration of a beautiful knit quilt, exhibited by Mrs. R. Foreman, of Carlisle, Pa.
To S. J. Logan, Chester co., for best bread, silver cup.
To Mrs. G. H. Bucher, Haastown, Pa., for second best home made bread, $3
Ruth Tanguy and Mrs. Lydia Young, West Chester, Mrs. Joshua Fackler, Harrisburg, and Mrs. George P. Weistling, Harrisburg, for home made bread, special premiums of $3 each.
To Mrs. Job Hayes, Embryville, Chester co., for best pound cake, $3
To S. J. Logan, Unionville, for second best pound cake, 2
To Catharine Dunlap, Harrisburg, for best sponge cake, 3
To Mrs. Wm. Martin, Allegheny city, for second best sponge cake, 2
Ruth Tanguy, West Chester, Pa., Matilda B. Thomas, West Chester, and Mrs. William Sterse, each a special premium of $2 for sponge cake.
To Mrs. George P. Weistling, Harrisburg, for best preserves, silver cup.
To Mrs. C. Ebey, for second best preserves, $3
Mrs. Sarah Newhart, Harrisburg, S. J. Logan, Unionville, Chester co., Mrs. Henry C. Hicock and Mrs. Samuel Wilt, Harrisburg, for preserves, a special premium of $3 each.
To S. J. Logan, Unionville, Chester co., for best fruit jelly, silver cup.
To Mrs. Job Hayes, Embryville, Chester co., for second best fruit jelly, $2
Mrs. George Bergner, Harrisburg, Mrs. James Clendening, North Middleton, Northumberland co., and Mrs. E. Brenhiser, Harrisburg, each a special premium of $2 for fruit jelly.
To Miss Harriet Summy, Manheim, Lancaster co., for best tomato figs, $5
To Mrs. Job Hayes, Embryville, Chester co., for second best tomato figs, 3
To Mrs. Mary E. Anderson, Cumberland co., for best tomato preserves, silver cup.
To S. J. Logan, Unionville, Chester co., for second best tomato preserves, $3
To Mrs. M. A. Locher, Harrisburg, for tomato preserves, a special premium of 3
To Miss Juliet Bennett, West Chester, for best specimens of pickles, 3
To Mrs. Sarah Newhart, Harrisburg, for second best specimens of pickles, 2
To Mrs. I. M. Kelker, Harrisburg, for specimens of pickles, special premium of 2
To Mrs. Job Hayes, Embryville, Chester co., for best sample of apple butter, 3
To Mrs. Annie Wampole, Norristown, Pa., for second best sample of apple butter. 2
To Mrs. E. Cassel, Dauphin co., for apple butter, a special premium of 2
To Mrs. G. H. Bucher, Hogestown, Pa., for best sample of quince butter, 3
To Mrs. Job Hayes, Embryville, Chester co., for second best sample of quince butter, 2
To Mrs. Annie Wampole, Norristown, Pa., for best sample of peach butter, 3
To Mrs. G. H. Bucher, Hogestown, Pa., for second best sample of peach butter, 2
To Mrs. Job Hayes, Embryville, Chester co., and Mrs. E. Cassel, Dauphin co., for peach butter, each a special premium of 2
To Mrs. Annie Wampole, Oakland Place, for best home made soap, 3
To Mrs. E. Cassell, Dauphin co., for second best home made soap, 2
To Mrs. Job Hayes, Embryville, Chester co., for fine soft soap, a special premium of 2
To Mrs. Sarah Newhart, Harrisburg, for brandy peaches, a special premium of 2
To Miss S. A. Bryan, Harrisburg, for a case of bonnets, 3
To Mrs. A. B. Carpenter, Harrisburg, for a case of bonnets, 3
To Mrs. M. J. Hooker, Harrisburg, for best tidy, 3
To Matilda B. Thomas, West Chester, for second best tidy, 2
To Matilda B. Thomas, West Chester, for crochet bonnet and collars, 2
To Mrs. M. H. Winebrenner, Harrisburg, for 4 pieces silk cashmere, 3
To Mrs. Jacob Mish, Dauphin co., for fine specimens of vinegar, 2
To Mrs. Wm. Verbeke, Harrisburg, for current wine, 2
To Miss E. Roberts, Harrisburg, 7 years old, for a quilt, 1
To Miss Felix, Harrisburg, 4 years old, for a quilt, 1

Simon Cameron,
Mrs. Jane Shunk,
Mrs. Eliza G. Walker,
Mrs. Mary H. Espy,
Mrs. Richard McAllister,
Miss C. M. Rehrer,
Committee.

No. 27—Manufactures other than Domestic.

To James Gowen, President:—The undersigned Committee in attendance, on Manufactures other than Domestic, respectfully report—That among the articles submitted to their

inspection, the display of Carriages, Buggies, &c., filling an entire tent, deserve especial notice.

To R. J. Fleming, Harrisburg, who exhibits 13 articles of his own manufacture, generally marked by originality of design and finish, for a two-seat close carriage, they award a premium of $10

To same, for a Paris phæton, diploma.

To W. W. Boyer, Harrisburg, for a very handsome sulky, a premium of $10

To Johnston, Brothers & Co., Allegheny city, for a most beautiful top buggy, a premium of 10

To Dr. Thomas Davis, Pottsville, for trotting buggy, a premium of 5

To G. W. Welsh, Hanover, York co., Pa., for a very fine fancy buggy, a premium of 10

To Devlin & Hoffman, Pottsville, for a trotting buggy, a premium of 5

To Paschall Morris & Co., for a very serviceable fire engine, diploma.

To Wm. H. Kepner, for "Hope Hose Co.'s" fire engine (Harrisburg), a premium of 20

To F. T. Foster, Philadelphia, for a large flag, made by machine, printing and silk flag, made by machine, a collection of machine-made bags, and large fancy tent, a premium of 10

To J. R. Boyd & Son, Harrisburg, for fine lot of cabinet furniture, silver medal.

To Lyon Lemberger, Jonestown, for woolen blankets, diploma.

To G. W. Boyd & Son, Harrisburg, for a lot of very fine chairs, diploma.

To Rohrer & Schott, Portsmouth, Dauphin co., for a window frame, complete, silver medal.

To S. A. Harrison, Philadelphia, for a lot of enamelled slate mantles, remarkable for their cheapness, durability and beauty of finish, silver medal.

To Wm. Conway, Philadelphia, for specimens of honey soap, chemical olive soap and palm soap, diploma.

To Jacob Fisher, Harrisburg, for a coffee mill, diploma.

To Evans & Watson, Philadelphia, for an alphabetical bank lock, a premium of $10

To Evans & Watson, for a salamander safe, silver medal.

To W. Vinters, Philadelphia, for sewing machine work, diploma.

To J. R. Reed & Co., Pittsburg, for a theodolite compass, silver medal.

To same, for Stubblefield's patent steam guage, silver medal.

To J. P. Miller, Harrisburg, for a coat of excellent finish, made with Singer's sewing machine, diploma.

To Henry Jackson, Portsmouth, Pa., for ropes, cords and washlines, diploma.

To Herring's patent burglar and fire proof safe, silver medal.

To Mills P. Espy, Philadelphia, for lot of preserved vegetables, fruits, pickles, &c. silver medal.

To Amos Rudy, Neffsville, for one pair of bed covers, diploma.

To A. J. Jones, Harrisburg, for a very fine display of imported carpeting and dry goods, silver medal.

To A. J. Jones, for Irish linen and silk warp flannel, diploma.

Diplomas to A. McCullough & Co., of Philadelphia, for samples of concentrated Turkey coffee, to Eli Krupp, of Philadelphia, for essence of coffee, to James Gibbons, of Philadelphia, for samples of American coffee, to Wm. C. Newell and L. W. Lathrope, for pure ground spices in cans, to Breinig, Fronefield & Co., for samples of vegetable cattle powders, to Ferger & Co., of Harrisburg, for wire-spun watch chains, to J. Guthrie, of Philadelphia, for a very fine coat, to Henry Jackson, of Portsmouth, for specimens of hemp, to Rohrer & Schott, of Portsmouth, for pannel shutters, rolling slat blinds and a door; to S. A. Harrison, of Philadelphia, for a lot of enamelled parlor grates; to John McCarroll, of Harrisburg, for a lot of fancy confectionery, and to A. Culbertson, of Pittsburg, for straw boards for book binders. A lot of bags, exhibited by Henry Hersh, of Lancaster, and bed-posts and table-legs, by Albert Fager, of Harrisburg, also deserve to be favorably noticed as very creditable to the manufacturers, and contributing to the general variety and interest of the exhibition.

All of which is respectfully submitted.

J. M. Beck,
Lyon Lemberger,
Charles Kelly,
Abram Freaner,
Stephen D. McCalla,
Committee.

No. 28—Winter Premiums.

Agricultural Productions of Field Crops.

Winter premiums to be awarded at the annual meeting of the Society, on the third Tuesday of January next.

A. O. Hiester,
JAcob S. Haldeman,
Rudolph F. Kelker,
John Strohm,
John P. Rutherford,
Committee.

No. 29—Fruit.

James Gowen, Esq., President:—The Committee on Fruit and Wines, submit the following report:

Apples.

To Jacob Cocklin, Cumberland co., for the best and greatest number of choice varieties, (in all 180 varieties,) the first premium of $10

[Among them, a new seedling, the Emanuel, was particularly worthy of note.]

To A. A. Tanguy, West Chester, for the second best and greatest number of choice varieties, (63 varieties,) $5

To S. C. Slaymaker, Lancaster co., for best collection of apples, silver medal.

To J. W. Stone, Harrisburg, for best peck of apples, (summer rambos, very beautiful and excellent,) $3

To S. P. Rutherford, Harrisburg, for second best peck of apples, (pound pippins, very fine,) 2

To Henry Backenstoss, Hanover, for third best peck of apples, (summer rambos,) 1

To H. A. Mish, Harrisburg, for the best dozen apples, (fall pippins,) 2

Fine apples were exhibited by A. W. Millheisen and Jacob Hite, of Harrisburg, G. W. Bucher and James Anderson, Hogestown, W. Verbeke, John Brightbill, John Bankers, Thomas Wood, Wm. Hummell and George A. Steel. We regret that we were not empowered to award premiums to some of these. A collection of 30 varieties, from E. A. Vickroy, of Cambria co., could not be found on the ground, having been probably miscarried in their journey to Harrisburg. This was greatly regretted by the officers of the Society, who made special efforts to find this, no doubt particularly valuable collection. Specimens of the best apples of the season, including Porter Dyer, Hardy Summer Pearman, Sweet Bellflower, and the Pride of September and Sink, two very showy and excellent apples, natives of Centre county, shown by Wm. G. Waring, were not in competition.

Cranberries.

To Miss Harriet Summy, Manheim, for best peck, domestic culture, $3

A rooted vine, loaded with fruit, was exhibited—a beautiful object.

Pears.

We found a very large and varied collection of this fruit, the finest varieties of which now attract such general attention from cultivators, and prove so thoroughly adapted to our climate. The specimens shown were universally fair and handsome, and the display will greatly benefit fruitists and the public in general, by its illustration of the variety and high excellence of the best pears, compared with those in ordidary culture.

To R. Buist, Philadelphia, for the best collection, 60 varieties, the first premium of silver medal.

This was an admirable show of superb fruits. The Bosc, Doy, Dillen, Fondante Churneuse, and Belle et Bonne, were ripe and very fine.

To J. Summy, Hanheim, for the best 5 varieties, including fine specimens of the very superior Shenks pear, a Pennsylvauia variety, $5

To Mrs. S. Trullinger, Harrisburg, for best peck, (Duchess D'Angoulcme,) 3

To Jacob Cocklin, York co., for second best peck, (Sickle,) 2

To H. Todd, Newcastle, Del., for third best peck, (magnificent pound pears,) 1

To S. Deal, Harrisburg, for best dozen pears (butter), 2

Among fine contributions to which our limits do not allow the award of premiums, we specially notice the 8 varieties shown by H. A. Mish, the sugar pears of Chas. Hummell, the Noble Duchess and Belle et Bonnes of Geo. J. Senks, the splendid Bosc and Diel pears of Aaron Bombaugh, and the Pounds of Wm. Verbeke; the Sickels of J. E. Fisher, and the Bartletts of J. Summy. Fine specimens were shown by Geo. Steel, of Huntingdon, Louis C. Lyte and H. Keller, and exceedingly fine white Doyenne pears, by Mr. Conyngham, of Lancaster. A very fine collection of 40 rare varieties was shown from the garden of Isaac B. Baxter, including a specimen of Anjou, which we considered the richest pear on exhibition. Specimens of very rich Bosc and Belle Sueratives, with other varieties, were shown by Wm. G. Waring. (These two collections by members of the Committee, were not entered for competition.) A silver medal to each of the two last.

Peaches.

The display in this branch was extensive and very fine. We have pleasure in telling the Pennsylvanians that the best flavored and handsomest peaches were new and native varieties. After critical examination and repeated comparisons and reconsiderations, we award the premiums as follows:

To J. W. Thorne, Parkesburg, for the best and greatest number of choice varietics of peaches—30 varieties, among which, Ward's late Free, Oldmixon free, and Druid Hill, were especially rich, $10

To H. W. Hoffman, Harrisburg, for the second best and greatest number of choice varieties, including fine Ward's late Free and Freeston Heath, 5

To H. Todd, Dover, Del., for the best collection, including two new varieties of great merit, called Grier's late and Todd's seedling, silver medal.

To H. W. Hoffman, Harrisburg, for the best peck—the Susquehanna, a native variety of extraordinary beauty, size and excellence, $3

To C. Bucher, E. Donegal, Lan. co., for the second best peck, 2

To A. J. Jones, Harrisburg, for the third best peck, 1

To Mrs. H. Antes, Harrisburg, for the best dozen peaches, 2

And we recommend a special premium of $2 for the new white seedling peach shown by Samuel Deal, Harrisburg.

Very fine peaches, highly deserving of premiums, which we were not authorized to award, were shown by George Rodfong, S. J. Kast, John M. Summy and Jacob Rohrer. A large collection was shown from the garden of Isaac B. Baxter, and a very fine yellow fleshed variety by Wm. G. Waring.

Plums.

The lateness and unpropitious character of the season prevented a full show of Plums. We award

To G. Leech, the first premium for the very handsome and rich Olonoga, $3

To A. D. Rutherford, Harrisburg, second best, very fine yellow gages, 2

To S. J. Kash, Mechanicsburg, third best, a valuable variety of late purple plums, 1

To Frederic Pfeiffer, for best German prune, and for a remarkable display of extremely fine fruit in the bunch, silver medal.

(Fine boxes of these were presented by Mr. P. to the President of the United States, and the President of the Society.)

To Wm. G. Waring, of Boalsburg, Centre co., for a collection of plums, including the sugary Ickworth, luscious Roe's autumn gage, singular and syrupy English golden drop, and other varieties, a silver medal.

Fine German Prunes were also shown by Miss H. Summy, Manheim, and blue plums by Miss R. Hynicka, Harrisburg, and a jar of extraordinary fine Bolmar Washingtons of great size and beauty, from a tree in the garden of Hon. Jas. Burnside, Bellfonte.

Quinces.

So many lots were shown that we cannot enumerate them. They were all fine. We award the first premium for very handsome specimens of a distinct variety

To J. Cassell, Harrisburg, $3

To John Loban, Harrisburg, second premium, 2

To J. P. Rutherford, Harrisburg, third premium, 1

Grapes.

The grapes exhibited by Mr. Martin, Alleghany City, Isabellas and Catawbas, gratified us especially. We award

To Mr. Martin, the first premium for native grapes, silver medal.

To Mr. Rodfong, of Middletown, for a beautiful display of fine bunches of black Hamburg, Hanstretto and white Muscat, silver medal.

To Wm. Martin, Sr., of Alleghany, for the best sample of grape training, and for the very beautiful and complete illustrations shown by him, silver medal.

The handsome and strongly perfumed variety of Fox grape called "Charter Oak" shown by John Kunkle, Harrisburg, Catawbas and Isabellas, shown by G. Rodfong, Saml. Wirt and J. M. Summy, a native variety resembling the Catawba, shown by Ira W. Train, and a large collection of nine varieties of native grapes, including the Ohio and Elsenburg, and four varieties of foreign grape, all from the garden of Isaac B. Baxter, were a most interesting and handsome display.

Melons.

To N. B. Harris, Camden, N. J., for the best watermelon, weight 36 pounds, $5

To Jacob Mish, Harrisburg, second best do. 3

To Juliet Bennett, West Chester, for the best citrons, 5

To H. W. Hoffman, Harrisburg, for second best do. 3

To Jacob Mish, Harrisburg, for the best musk melons, 5

To J. M. Summy, Manheim, for second best do. 3

Fine Citrons for preserving were shown by Mr. Summy.

Wines, &c.

To Wm. Verbeke, Harrisburg, for the best home-made cordial, (blackberry) $3

To Mr. Samuel Wilt, Harrisburg, second best do. 2

To J. M. Summy, Manheim, for best Catawba wine, 3

To N. Longworth, Cincinnati, for best sparkling Catawba and Cincinnati wine, silver medal.
To Mrs. Sarah Newhard, Harrisburg, for best currant wine, pure, sweet, silver medal.
To David Epsenshade, Harrisburg, for parsnip juice and sugar, excellent, resembling sherry, $2
To John Wetzell, Harrisburg, for Morello cherry wine, 1

We regret that there was no sample of cider kept sweet one year, on exhibition. We recommend the offered premium to be continued. We also suggest the propriety of offering premiums for dried fruits, dried by the most expeditious and perfect method, with description of the mode or machinery used. Also for the best apple butter made from apples without any addition, with mode of making, and specimens of the fruit used. And we suggest the great advantage of having the entries made in the committees book, each under its appropriate heading, so that apples, pears, and all other items may stand together.

(Specimens of all the premium fruits were collected and presented by the Society, to the President of the United States, on the occasion of his visit.)

J. S. Black,
Jas. Pollock,
W. G. Waring,
Jno. Murdock, Jr.,
Jas. Burnside,
—— Committee.

No. 30.—Flowers, Plants and Designs.

To James Gowen, President:—Your committee in Class 10, No. 30, on Plants, Flowers, and Designs, beg leave to respectfully report, that having had the pleasant duty assigned them of an examination of the Floral treasures on exhibition at the Fifth Annual Fair of the Pennsylvania State Agricultural Society, may truly say, "their path has been strewn with flowers," and, although this class has not been as fully represented as some of the others, yet, the display is most creditable to the exhibitors. The plants show good cultivation, and the designs and floral ornaments have been got up by those who evidently understand their business. They therefore take pleasure in awarding the following premiums:

To John Loban, of Harrisburg, for collection of green house plants owned by one person, a premium of $10
To A. A. Tanguy, of West Chester, for the greatest variety of roses, a premium of 3
To John W. Houston, of Columbia, for the second greatest, a premium of 2
To Jos. Yewdall, of Columbia, for greatest variety of Verbenas, a premium of 3
To John Shock, of Harrisburg, for second greatest variety of Verbenas, a premium of 2
To Jos. Yewdall, of Columbia, for best 10 varieties of Verbenas, a premium of 3
To same, for the best floral ornament, a premium of 10
To Miss Ellen Murdock, of Pittsburg, for best hand boquet, (flat) a premium of 3
To Miss A. Clickner, of Harrisburg, for best hand boquet (round,) a premium of 3
To Mrs. S. Banford, of Harrisburg, for second best boquet (round), a premium of 2
To Matilda B. Thomas, of West Chester, for best basket boquet, a premium of 5
To Saml. D. Ingram, of Harrisburg, for the most beautifully arranged basket of flowers, 5
To Alfred A. Tanguy, West Chester, best collection of dahlias, 3
To R. Buist, Philadelphia, second best do. 2

Our attention was also called to a specimen of Osage Orange Hedging, by Mr. A. Harshbarger, of Newton-Hamilton, Mifflin co. Your committee having no special authority for awarding a premium, do yet feel a desire in consideration of the great and growing necessity for this kind of fencing, and also in consideration of Mr. Harshbarger being the first who has entered regularly into the business of planting and trimming hedges, suggest to the Society, the awarding to Mr. Harshbarger of a silver cup valued at $10. All of which is respectfully submitted.

J. B. Garber,
William Hacker,
D. W. Patterson,
—— Committee.

No. 31.—Stoves, &c.

To James Gowen, President:—Your committee, No. 31, had the pleasure of examining the many interesting and valuable contributions under the head of Stoves, Ranges, Iron-railing, &c., exhibited at the Fifth Annual Exhibition of the Pennsylvania State Agricultural Society, respectfully submit the following awards:

To M. A. Swiler, of Harrisburg, for Bebee's patent cooking range, a silver medal.
To same, for best hall stove, "McGregor's patent," a silver medal.
To same, for iron mantel, made in Boston, diploma.
Fo same, for a beautiful display of japanned and enameled tin, ventilators and registers, a diploma.
To Ex-Governor David R. Porter, for best No. 1 foundry iron, a diploma.
To Wm. Bush, of Harrisburg, for best iron-railing, $5
To John Smith, of Harrisburg, for the best sculptured marble, silver medal.
To Michael Casey, for fine specimens of sculptured marble, from American quarries, $5
To S. A. Harrison, for best Furnace, (Chilson's) for heating houses, a silver medal.

William Dock,
David Stewart,
J. L. Gantt,
—— Committee.

No. 32.—Silverware, Glass and Glassware, Cutlery and Britannia.

To James Gowen, Esq., President:—The undersigned, judges, report that they award

To Henry Gilbert, for a lot of Brittannia ware, a diploma.
To same, for a lot of circular saws, mechanics' tools, &c., &c., a diploma.
To John Young & Co., of Harrisburg, for a lot of stone ware, a diploma.
To William Brady, of Mt. Joy, Lancaster co., for one case of edge tools, and mill picks of very superior style and finish, a silver medal.
To Carlisle & Co., of Chambersburg, for a lot of edge tools consisting of six pieces only, a diploma.

W. H. Lowrie,
Geo. F. Gillmore,
J. K. Boas,
—— Committee.

No. 33.—Bacon—Hams.

To the President of the State Agricultural Fair—The committee appointed on bacon and hams respectfully report that they award

To Job Hayes, of Chester co., for the best hams, $8

The mode of curing them is to take 10 lbs. of coarse salt, 4 oz. saltpeter, 2 lbs. brown sugar, dissolved in 4 galls. water to 100 lbs. meat; keep them in pickle eight weeks.

Wm. Ayres,
D. Brantigam,
Committee.

No. 34—Inventions.

The Judges composing the above Committee respectfully report, that they have carefully examined the several articles embraced in the branch of the class entrusted to them, so far as they have come to their knowledge, and submit the following decisions and awards as the result of their labors:

To Augustus Leibtrue, Harrisburg, Pa., for improvement in arranging and securing slates on the roofs of houses, silver medal.

To Robert Owens, Lancaster, Pa., samples of slate for roofing from Rowland Parry's slate quarry, Peach Bottom, York co., Pa. These samples are strong and smooth on their surfaces.

To Charles Muench, Harrisburg, Pa., for best lot of pressed and other bricks, $3

To Z. L. Hough, Harbor Creek, Erie co., Ambrose Foster's (patented) improved building blocks, composed of lime and sand, 3

To James Hungerford, Philadelphia, for a lot of Arthur and Burnham & Co.'s self sealing cans and jars for preserving fruits, &c., silver medal.

To Thomas Walter, Jr., for Pierson's patented barrel hoop and moulding machine, silver medal.

To Gilliard Dock, Harrisburg, Pa., samples of standing presses, saw mandrils, mill screws, press screws, and lot of bed posts, camp stools, and specimens of wood turning and scroll sawing, bronze medal.

To R. A. Hutchinson, Geneva, N. Y., mode of hanging mill saws without requiring them to be strained, bronze medal.

To J. H. Hutton, Richmond, Indiana, Fulghun's patent portable saw mill, silver medal and $20

To Fager & Mayer, Harrisburg, Pa., an excellent water cooler.

To Kelker & Brothers, Harrisburg, Pa., case of edge tools, two platform scales (Fairbank's), and two church bells, bronze medal.

To Jacob Zook, Harrisburg, Pa., automaton lathe chuck. This is a desirable improvement, diploma.

To George J. Linck, Philadelphia, water closet fixtures, and other articles of an ornamental and useful character, composed of a new material termed *Terra Cotta*, designed to take the place of metal in the formation of articles exposed to water or extreme heat. This material can be usefully applied to many purposes, where metal and other materials would not answer.

To James Mitchell, Philadelphia, an excellent lot of grindstones and friction rollers for supporting the shafts of the same, also an eye for burr mill stone.

To R. C. Justice, Newport, Delaware, self acting gate. The attachments and hanging of this gate are such as to enable it to be opened and closed by the vehicle or person riding in the same or on horseback, bronze medal.

To H. S. Lutz, Harrisburg, Pa., bathing tubs, hydrants and coil pipe. These are good specimens of workmanship in plumbing, bronze medal.

To Mahlon Ortlip, Philadelphia, patented mill picks. This improvement is for firmly holding the tool, and enabling it to be extended from the main body of the pick as it wears, and is deemed worthy the attention of millers.

To William Tell, Harrisburg, Pa., a miniature ship of beautiful workmanship and artistic taste.

To Savery & Co., Philadelphia, marlen kettles and other hollow ware, articles for agricultural purposes and the kitchen. These articles are well formed, and show a high degree of excellence in this branch of manufacture, silver medal.

To Manoah Alden, Philadelphia, patent fan blower, diploma.

To A. K. Bowers & Co., Lancaster, set of octagonal bed posts, and other wood work of a similar character, reflecting great credit on the skill and taste of the exhibitor.

To Adam Miller, Antes, Blair co., Pa., for Hollen's patent knitting machine, a very ingenious piece of mechanism, silver medal.

To Wm. Fields & Co., Wilmington, Delaware, pressure water wheel, designed to be used where a small quantity and considerable fall of water can be obtained. It is made of cast iron, and can be applied to threshing, grinding, and other purposes, diploma.

To W. S. Reinert, Philadelphia, Pa., machine for weighing and printing butter, diploma.

To Lettie A. Smith, butter worker and cooler, bronze medal.

To E. Milford Bard, Philadelphia, for Truckman's plough for pulverising the earth while ploughing, silver medal.

To J. A. Becker, Pottsville, copper tea kettles and brass coffee pots, beautifully finished and well adapted to the purposes for which they are intended.

To Joseph Bernhard, Philadelphia, improved soda water apparatus, diploma.

To Jacob Hollwegs, improved writing desk, table and chair combined, bronze medal.

To Henry Coy, Philadelphia, for Wilson's patent stitching machine, silver medal.

B. Randall, Norristown, Pa., for Singer's patent sewing machine, diploma.

To C. H. Hitchcock, Philadelphia, for Grover, Baker & Co.'s patent sewing machine, diploma.

To John L. Pomeroy, Philadelphia, Pa., superphosphate of lime, a prepared chemical fertilizer, silver medal.

To C. P. Hewes, West Chester, Pa., Hewes' premium superphosphate of lime, an hydrous or dried blood, and Pennsylvania fertiliser prepared from leather refuse, bronze medal.

To Daniel Shapp, Harrisburg, lot of American ombre, an excellent article.

To S. R. Jones, Baltimore, Md., improved peg rasp, bronze medal.

To B. Eplers, Harrisburg, fancy musket of beautiful finish, reflecting great credit on the maker.

To J. H. Herron, Newville, Pa., superior writing desk, bronze medal.

To Wm. H. Bickley & Co., Danville, Pa., chemical extracts for coloring wool, &c., and liquid blue or soluble indigo, bronze medal.

To J. C. Appleton & Co., Boston, Mass., attachment for softening the air of hot air furnaces, diploma.

To J. C. Marsh & Co., Philadelphia, spinal brace, spring apparatus for bow legs, and patent radical cure truss, diploma.

To A. Myers, Logansport, Ind., magical pill or tape worm trap. The object for which this is intended should entitle this article to the attention of physicians.

To Jacob Seners, Carlisle, Pa., cold lard lamp. The peculiar construction of this lamp enables the lard to be kept at all times in contact with the part of the wick near the flame.

To S. D. Miles, excellent specimens of stone pipe.

To Lewis Luckhardt, Johnstown, Pa., improved clock, a monthly regulator, silver medal.

To George Philips, Philadelphia, corn planter, cultivator and hoe harrow combined, silver medal.

To Dr. J. P. Keller, Harrisburg, granular dentifice and tooth wash, very desirable articles for the preservation and cleanliness of the teeth and gums.

To W. H. Towers, Philadelphia, spring heel and move able cork horse shoe (patent), silver medal.

To Cushion, Dillsburg, direct action water wheel. The buckets of this wheel and inner periphery of the case in which it is placed is so formed as to cause the water to act directly upon the buckets, and be inpinged by the scroll formed periphery, and pressed upon the buckets during its revolution with the same.

To Ezekiel Daniels, Union, Broome county, N. Y., adjustable bedstead for invalids, silver medal.

To W. Patton, Towanda, Pa., sash supporter for securing the upper and lower sash at any point of elevation, diploma.

To Boyer & Brother, Harrisburg, W. B. Coates' corn cutting machine. This machine is designed to cut the corn in the field by drawing a portion of it over the standing corn and cutting the same at a suitable distance from the ground.

To Sylvester Colborn, Derby, Connecticut, elastic knives for mowers and reapers, bronze medal.

To C. W. Emerson, Albany, New York, improved weeder, silver medal.

To Dr. C. L. Kelling, specimen of vegetable salve for the cure of tumors, &c. This article is designed to remove tumors and other formations of a like nature without the use of the surgeon's knife. It is well worthy the attention of physicians and those afflicted with the diseases it is intended to eradicate.

To George A. Leinau, Philadelphia, American fertiliser. As Mr. Leinau failed to furnish the Judges with an analysis of his fertiliser, they are unable to do more than recommend it to farmers for trial.

To H. E. Smith, improved attachment to patented corn sheller for thoroughly cleaning the corn after being shelled, silver medal.

Wm. H. Towers,
Edmund Maher,
E. W. Jemison,
Committee.

No. 35—Miscellaneous Articles and Fine Arts.

To James Gowen, Esq., President:—The undersigned Judges respectfully report as follows:

That there were several articles and productions of art of great merit offered, to which, with those enumerated in the schedule furnished by the Secretary and presented for inspection, they now award the following premiums:

To Thomas Curtis, of Philadelphia, for a collection of portraits in colored crayon, very fine, a silver medal.

To the same person, for a collection of gilded picture frames, a diploma.

To Washington Barr, of Harrisburg, for a collection of daguerreotypes, photographs and stereoscopes, a silver medal.

To A. C. Smith, of Harrisburg, for a case of daguerreotypes and two frames of daguerreotypes, a diploma.

To Jacob M. Beck, of Harrisburg, for specimens of the letter press printing of engravings on sheet-tin, (a new invention which promises to facilitate and cheapen the multiplication of copies of engravings,) a silver medal.

To Jacob M. Barr, of Harrisburg, for specimens of gold enamelling by a process recently introduced from Japan, a bronze medal.

To E. J. Erisman, of Lancaster, for specimens of gilding on glass, a diploma.

To Abm. Dehuff, of York, for a miniature gold watch, three-eighths of an inch in diameter, to run three hours, a bronze medal.

To John A. Wright, of Lewistown, for a superior lot of hammered iron, a diploma.

To James Denning, of Harrisburg, for fine furnace tweers, a diploma.

To Thomas Humphrey, of Reading, for a rust preventive, a bronze medal.

To Joshua H. L. Landis & Sons, of Lancaster co., for fine specimens of iron ore, with analysis, a diploma.

To J. R. Eby, of Harrisburg, for a variety of sample coal, a diploma.

To John J. Cochran, of Lancaster co., for handsome specimens of coal from the "Lancaster Colliery," Shamokin, Pa., a diploma.

To Joshua W. Jones, of Harrisburg, for a set of blank books of superior binding, a bronze medal.

To George Bergner, of Harrisburg, for a case of books and stationery, and a lot of blank books, a diploma

To J. C. Bliss, of Philadelphia, for a collection of articles carved out of the nut of the Tagus plant (Lower California), a bronze medal.

To W. Barr, of Harrisburg, for a large collection of daguerreotype cases, a diploma.

To Mrs. James Colder, of Harrisburg, for flowers in water color, a diploma.

To Miss Laura A. Hadley, of Mechanicsburg, Cumberland co , for a monochromatic drawing, a diploma.

To Miss Emma C. Winebrenner, of Harrisburg, for a bunch of carnations in water color, a diploma.

To the pupils of the Harrisburg Female Seminary (Mrs. Leconte's) for a large collection of preserved botanical specimens and crayon drawings, a bronze medal

To Miss Baird, of Washington, Pa., for two landscapes in oil, a diploma

To Mrs. Anna E. Jones, of Harrisburg, for crayon drawing, a diploma.

To Mrs. Lydia M. Lawrence, of Harrisburg, for specimens of penmanship, a diploma.

To E. W. Shell, of Harrisburg, for a collection of insects, a diploma.

To W. J. Parks, of Harrisburg, for two cases of insects, a diploma.

To A. Furger, of Harrisburg, for a collection of butterflies, a diploma.

To Jacob F. Little, of Lebanon county, for three lap dogs, $3

THOS. H. BURROWES,
SAM'L F. CARMALT,
L. HENRY TWADDELL, M. D.,
Committee.

No. 36—FARM BUILDINGS.

To the Executive Committee of the Pennsylvania State Agricultural Society:—The undersigned, members of the Committee on Farm Buildings, report, that there has been no competition for the premiums offered for "the best and the second best plans of farm buildings, with descriptions thereof." This failure your Committee attributed to the fact, that being the first premiums offered by the Society for these objects, they have not come under the notice of architects and builders. The importance of continuing the premiums at future exhibitions, with a view to improvement in the location and construction of the various buildings required on the farm, must be obvious to every one who will reflect upon the subject. The selection of the most healthy and pleasant site for the location, to combine permanence, economy, convenience, symmetry, and beauty, in the construction of the buildings, are objects, the attainment of which cannot be too highly appreciated in a community in which many—*very many*—of the farm buildings are badly constructed, and placed upon the very ends and corners of the farms, and even in the ravines and swamps, under the mistaken hypothesis that the requisite supply of *good cold water* could be had no where else, as though we lived in that part of Peru where rain never falls, instead of Pennsylvania, in which we have from the clouds an average *annual supplg of four feet of the very best water nature affords.* All which is most respectfully submitted.

H. N. MCALLISTER,
ALEX. HAMILTON,
EPHRAIM BANKS,
Committee.

P. S.—On Thursday evening, after the Committee had made their report and adjourned, a plan of farm buildings, with description thereof, by Edward Kohler, of North Whitehall, Lehigh county, Pa., was handed to the chairman of the Committee. Although the regulations of the Society had not in any respect been complied with, the chairman asked and obtained leave to note the facts in a postscript, and to attach the plan to the report, which is done. H. N. MCALLISTER.

No. 37—MUSICAL INSTRUMENTS.

To James Gowen, Esq., President:—The Committee to whom was referred the examination of "Musical Instruments" respectfully report, that this department was represented on a scale commensurate with the great improvement in that branch of the mechanic arts.

J. E. Gould, of Philadelphia, exhibited three pianos from the manufactory of Hallett, Davis & Co., of Boston, one 7¼ octave, Louis XIV, one 7 octave, plain case, one 6½ octave, Louis XIV, all of superior tone and finish. There was also one from the house of Bacon & Raven, New York, 6¾ octave, plain case, which fully sustains the reputation of this well-known house.

Nicholas Steinhauser, of Lancaster, Pa., had on exhibition one 6¼ octave piano. This instrument was manufactured within our own borders, and does credit to the State as well as the manufacturer.

Rufus Nutting, of Randolph, Vermont, exhibited an instrument combining the various powers of the piano, melodeon, seraphine, &c., which excels the later in the simplicity of its construction and in the power and variety of its expression. It gives the Committee great pleasure to concur in the numerous testimonials awarded the inventor for his ingenious instrument, the Æolicon.

The Committee have awarded the premiums as follows:

To Hallett, Davis & Co., Boston, for the 7¼ octave, first premium, a silver medal.

To Nicholas Steinhauser, for his 6¼ actave, second premium, a diploma.

To Rufus Nutting, for his Æolicon, a diploma.

We cannot close this report without gratefully acknowledging the assistance rendered us by Messrs. J. Ptasyk and Joseph Kohler, of Harrisburg. The judgment, taste and experience of these gentlemen relieved your Committee from much of the responsibility attending the discharge of their duty.

MRS. WM. SERGEANT,
MRS. WM. H. MILLER,
MISS SOPHIE JONES,
Committee.

☞ Owing to the Reports of Committees of the State Agricultural Society occupying so much space, we have been compelled to omit Judge WATT's address at Harrisburg, and several other valuable articles till a future number.

PENNSYLVANIA FARM JOURNAL.

VOLUME 5. PHILADELPHIA, DECEMBER, 1855. NUMBER 12.

For the Farm Journal.

Agricultural Botany.

BY HARLAND COULTAS, PROFESSOR OF BOTANY IN THE "WAGNER FREE INSTITUTE OF SCIENCE."

NO. 4.

NUTRITION IN PLANTS AND ANIMALS.—In this article we shall endeavor to show that lessons most instructive and deeply interesting, which greatly facilitate the acquisition of correct views of the physiology of animals, may be obtained, if we will only come to the plant for instruction. The differences amongst the organic productions of nature are not so great as is usually supposed. There is a oneness in nature which has yet to be understood and appreciated.

Nutrition has for its object a double end. It conveys to the organic being without ceasing, the substances necessary to maintain the integrity of its organs, and to repair the losses occasioned by the movements of vitality; it also furnishes the material required for the increase of the organs and the development of new parts. Nutrition is in principle precisely the same in both animals and plants. In this respect it is philosophically as well as scripturally true, that "all flesh is grass." This function, as exercised in plants and animals, is a very complicated process, and implies several distinct acts. 1. The introduction of food into the organism (*absorption*). 2. Its distribution to all its parts (*circulation*). 3. The elaboration of the nutritive fluid by contact with the air (*respiration*). 4. The elimination of effete matter (*excretion*). 5. The formation of the nutritive material into the tissues or substance of the organism (*assimilation*). We proceed to compare these several processes in the plant and animal.

1. The introduction of food into the organism (*absorption*). This process is greatly simplified in the plant, which lives as it were in the midst of its food, with which its organs are in perpetual contact. We have shown how beautifully the subterranean and atmospheric ramifications of the stem are organised with reference to the two media in which the plant developes; and that food is absorbed into the organism of the plant from the atmosphere by the porous surface of the leaves, and from the soil by the fibrous extremity of the roots. Analysis shows that the material of which the organism of plants is composed is principally carbon and the elements of water, hydrogen and oxygen, to which is to be added an inconsiderable portion of earthy matter, which enters the plant along with the water absorbed from the soil. As the plant is elaborated for the most part out of water and air, its food comes into contact with its organs in a condition fit for absorption, entering the organism in accordance with the laws of capillarity and endosmosis, which are beautifully exemplified in the nutrition of plants.

It is far otherwise with animals. Air and water will not suffice for their nourishment. They require more solid and substantial food, and are provided with suitable organs for its prehension and preparation. In man, whose wants are infinitely more numerous than that of the inferior creatures, these organs exist in the highest condition of development. He is provided with a hand, which may be justly regarded as the most perfect of prehensile instruments. To the skilful use of this organ, under the guidance of reason, he owes his superiority over the other animals, whose superior members are more for the support of their bodies than for the seizure of objects. The other organs consist of an alimentary tube or canal, more or less dilated in its course through the body. At the upper portion of this canal there is an opening called the mouth, which is provided with an appropriate arrangement of teeth for cutting and crushing the food, and of salivary glands for effecting its lubrication. The food having been thus ground and lubricated in the mouth, descends into the digestive cavity or stomach, where it is acted upon by the gastric juice secreted by the walls of that organ, and ultimately converted into a fluid of a whitish color named chyle, which as soon as it is formed, is absorbed by the radicles of a system of vessels named chyliferous vessels or lacteals, these re-unite into branches more or less voluminous, and ultimately meet in a common trunk called the thoracic duct. This duct, which is about the size of a common quill, conveys the chyle to its point of junction with the subclavian vein at the lower part of the neck, pouring into the torrent of the circulation. The blood thus becomes enriched by this addition to its constituents of the nutritive material, which speedily becomes spread to all parts of the organism, by means of the successive ramifications of the conveying tubes of the arterial and capillary system.

The absorption of food into the organism of animals and plants is therefore in principle precisely the same thing, with this difference, that there is superadded to the animal a highly complicated nervo-muscular apparatus for its prehension and preparation. The introduction of food into the digestive cavity or stomach is

wholly a voluntary act, and results from the exercise of the functions of animal life; its digestion and absorption when there is altogether involuntary. The whole process of chylification and lacteal absorption proceeds without our consciousness, and cannot be controlled by any effort of our will. We feel invigorated by the food which we have taken, but this is produced by vital operations which nature has not trusted to our guidance, as they are too intimately associated with the life which she seeks to preserve. All these internal motions are in fact purely vegetative acts, proceeding from the operation of that life which we have in common with plants.

Free-Martin Cows.

WEST CHESTER, Oct. 8, 1855.

L. L. DARLINGTON, ESQ.—Dear Sir:—In one of the numbers of the "Farm Journal" of last year, I presented you a communication in regard to Free-Martin cows; as to the cause of their sterility, I will now communicate to you in a concise form the examination of a heifer, which lately came under my observation on the farm of Mr. BENEDICT GREEN, of Pocopson township.

Whether it was a Free-Martin or not cannot be definitely settled, since it was purchased of a Maryland drover; but the dissection shows the same malformation in the funnel, with a differently formed womb from the one before communicated.

The external parts were perfect; the funnel also perfect for about eight inches, here complete occlusion commenced and continued about two and a half inches, when we arrived at the womb, which was of a complete triangular form, with base and sides of about three inches in length. Communicating with the upper angles were the fallopian tubes, completely impervious and four inches in length; attached to the broad ligaments were perfect ovaries, but of a much smaller size than in the perfectly formed animal.

Here then we have another case of sterility caused by the same malformation as that which was last published in your Journal, and the question as to birth would now place us one point nearer the solution of this much mooted point, as to the cause of sterility in cows bearing the name of Free-Martin, but I fear we shall be unable to ascertain any thing upon this point.

I would again request you to call the attention of farmers to this matter, and any specimens sent will be gladly examined and reported to you for their benefit.

Very respectfully,

WM. H. WORTHINGTON.

Cranberry Culture.

MODE OF CULTIVATION.—The cranberry may be propagated from the seed, or from cutting, or by transplanting. The first crop obtained from planting the seed will ordinarily be a year or two later than that produced by wild plants transplanted. It is, therefore, found to be more profitable to transplant, except in one or two sections of the State, where the interest in transplanting has been so great that $10 a square rod is not an uncommon price for plants, where the ground is thickly covered.

Where it is desired to propagate by slips or cuttings, the usual practice is to gather a large quantity of vines, and run them through a common hay-cutter, until they are reduced to the length desired—an inch or so—when they may be sown broadcast and harrowed in; though it is considered best, on some accounts, to sow in drills and cover properly. These slips very soon take root, starting from the base of the leaves, and at the same time shooting up many rising branches.

If sown broadcast and harrowed, they should not be overflowed till the slips have taken root, as otherwise, many remaining uncovered, will be floated off.

In the case of cranberries growing wild, it is a common and well known practice to flow or cover them with water during the winter and early spring. This is very desirable, if the situation is such as to allow it, though it is not generally considered essential by those who have been most successful. It is often useful where there are facilities for flowing, to let the water remain a few inches deep till the spring is well advanced, (some think till the first of May, or even later,) to retard the blossoming till there is no danger from frosts. Facilities for flowing are desirable in the *cultivation* of cranberries also; and if the plantation could be so arranged as to flow very quickly, it might be of essential service, occasionally, during the spring and autumn.

As the cranberry, in its natural state, is more frequently found growing in a low, wet swamp or marsh, that kind of land is generally selected for its cultivation. The mode of setting out the cranberry in such a swamp if we suppose it to be covered with bushes and grass, and surrounded by a sandy soil, or in the immediate neighborhood of sand, would be as follows: First, cut the bushes and pare off the surface turf to the depth of three or four inches, so as to remove, as far as possible, the roots of grasses and bushes; then level the whole, by filling in sand to the depth of from two to four or five inches, according to circumstances. It is desirable that the surface of the sand should be raised but slightly above the level of the water of the swamp, meadow or pond filled up, so that, by digging into the sand with the hand or hoe, the water may be found within two or three inches of the surface.

The plants should be taken up with the spade in square turfs of the thickness of two or three inches, this being the depth to which the roots generally descend. When the ground has been levelled and prepared as directed above, it will be convenient to draw straight lines and set the roots about eighteen inches apart one way, and one foot the other, in small clusters of about five or six together, the grasses taken up with them in the turf having first been removed from them. The practice of some has been to set the turf, thus taken up, into the row without removing the grass; but the vines are so tenacious of life that there is little danger of their dying, even if all their natural earth is removed from their roots, and those who have followed this method have generally less trouble in the subsequent cultivation.

Some prefer to set them in rows at a greater distance apart, having the rows two and a half or three feet, and the plants one foot in the rows. If the sand is thick and loose, so as to make it impracticable to cultivate the vines and pull up the weeds and grasses, on account of the danger of starting the roots, the closer the plants are set the better, since they will thus the sooner cover

the ground and get the advantage of the grasses. Where it is not intended to hoe the plants in such situations, a foot each way will probably be the most convenient distance between the plants.

The cost in such cases varies from $100 to $400 per acre. Under the most favorable circumstances I have never known an acre to fall below $125, and that, too, when it has been prepared in the most economical way, all the labor being performed by the owner himself. The cost, including the original preparation by paring, fencing, filling with sand, procuring and setting out the roots, has more frequently been $300 per acre. When the roots are thus transplanted, a foot or a foot and a half being left between them, they are expected to spread and entirely cover the ground in about three years. If the position be a peat meadow, substantially the same course should be pursued.

There has been some difference of opinion as to the use of peat or sand after the incipient grubbing and paring has been done; but the weight of opinion seems to be in favor of the sand, not because the cranberry will not grow equally as well in peat, but because the grasses growing so abundantly in peat increase the labor of cultivation. A somewhat similar mode of procedure is sometimes adopted in the case of ordinary low meadows or swamps. If the meadow is covered with bushes and tussocks, remove the former with the grubber, cut the tussocks off level with the surface, when the vines, being taken from another part of the meadow or elsewhere, are set by first striking the hoe into the soil and raising it slightly, when the roots are inserted and pressed down with the foot.

The mode of Mr. Leland, of Middlesex, Mass., was to cut out squares of turf corresponding to the squares of cranberry vines, which he placed in their stead, and keep the vines under water from spring till July to destroy the worms.

Mr. Thomas H. Samson, of Plymouth, Mass., removed the whortle bushes and alders, tussocks and tops of the soil, and early in the spring set about one-fourth with cranberry vines without any dressing. He continued annually for three years to set the same quantity, a part of which he covered with a dressing of gravel and soil about an inch in thickness, and a part with sand and gravel, and sowed over the lot a bushel of cranberries, first crushing them and mixing with sand. He finds no beneficial effect from the sand—finds his cranberries do best where the peat or mud is deepest. He flowed his cranberries from October to April. His products were at the rate of 250 bushels per acre. Has no faith in raising cranberries on dry soil.

Other experiments, however, show the practicability of raising cranberries on upland. Mr. Roberts' experiment embraced a tract near the foot of a slope descending in a westerly direction. The ground was plowed eight inches deep and harrowed; light furrows, three and a half feet apart, were run lengthwise, and the sods were cut from the swamp, carted on the upland, and placed three feet apart in the rows (though two would have been better), then carefully hoed and kept free from weeds for two years. No water was supplied, except that received from occasional rains.

In the cultivation of cranberries, whether on upland or lowland, it is very important that the ground should be entirely covered by the vines as soon after planting as possible, not only on account of the great saving of labor, by thus preventing the growth of grass and weeds, but also because very little fruit is commonly produced until the vines have thus spread over the surface. At the end of three years the whole ground should be covered; but in the instances of upland culture referred to it was not so, though the plantation had been set there at least three or four years. Probably if the roots had been but twelve or eighteen inches apart, the result would have been different in this respect. As it was, however, the yield in 1852 was one bushel to the square rod, or 160 bushels to the acre, when cranberries were selling readily at $4 per bushel.

Ripening of Apples and Pears.

There are, in the following article from the Genesee Farmer, several good hints which are applicable to the season:

To have sound and perfect apples through the winter months, it is absolutely necessary that much care should be given in gathering. This should be deferred with the winter fruit as late as practicable, and avoid early severe frosts. The fruit should be picked from the tree by means of ladders, and placed in baskets, when it should be assorted and packed at once into new tight barrels. These barrels, after heading, should be removed on sleds to a shed through which the air circulates freely, or they might be protected easily from the dew and rain by placing boards over them. They may be allowed to remain in this situation a week or more, or until the cold is too severe, when they should be transferred to a cool, dry cellar, and into which air may be admitted in mild weather. The barrels should then be placed in tiers upon their sides, numbering upon each head the quality of the fruit contained in the barrel, and the name. The small imperfect but sound fruit is treated in the same manner, and marked No. 2, indicating an inferior sort. Apples which are intended for market are frequently assorted into three different classes, the *best*, *good*, and *inferior*—the former being all selected fruit; the *good* containing sound fruit of medium or small specimens; the third being so poor that the fruit is wholly unfit for market, and suitable only for stock or immediate family use. All of this is easily done, yet many whole orchards bring but an inferior price for want of this care.

Too often we find that winter apples are left upon the tree very late in the autumn, frequently till they have been exposed to two or three severe frosts; when convenient they are shaken from the trees, the good and bad poured into barrels or open wagons, of perhaps half a dozen sorts. Afterwards they are emptied promiscuously into bins, barrels, or open boxes, where they are expected to keep well through winter. This is a most ruinous method, yet it is practised by at least three-fourths of the farmers; or they adopt another course equally as wasteful in securing the fruit.

Fully one-half is lost by this method of gathering, as the fruit ripens prematurely and decays rapidly by being bruised. The decay is very much hastened where several sorts are mixed promiscuously together, ripening at

as many different seasons. Those kinds, too, which do not come to maturity till late in the winter or early in the spring, are turned and handled many times when assorting those which are in season during November and December.

Light is found unfavorable to the keeping of fruit, and should be excluded; and it is often noticed that where fruit, particularly pears, is placed in a room above ground, and oftentimes in a very dry cellar, and left exposed to the air, they shrivel. They should, therefore, be kept either in barrels or tight boxes. About the time pears are needed for use they can be removed to a room of higher temperature, and kept as closely as before in drawers or boxes, where they will ripen very speedily, and will possess much finer flavor than if allowed to ripen in a cooler place. By treating pears in this way, one variety can be made to last a long time.

Summer pears ought to be gathered a week before ripe; early autumn kinds about ten days or more; late fall and winter varieties ought to be allowed to hang upon the trees as long as they may and escape frost.

There is yet very much to learn in ripening winter pears well, more particularly the late sorts. But few orchardists are there who have been successful in ripening such sorts as *Easter Beurre*, *Josephine de Malines*, *Prince's St. Germain*, and many other late winter kinds. In fact, it is found almost impossible with the fruit rooms, conveniences, and cellars now in ordinary use. Some few enterprising persons in this country have expended considerable sums in buildings, etc., to ripen winter sorts, and in the main succeed well; but it is quite useless for farmers and many others to plant trees of such varieties of fruit that require so much care in ripening, unless they are prepared to embark into it extensively, erect the necessary buildings, and give close attention to it; then it will pay and prove quite remunerative; otherwise all trials or experiments will be quite unsatisfactory.

The Wyandott Corn.

We have received from Mr. J. C. Thompson, of Tompkinsville, Staten-Island, N. Y., a full description of this new, and in some respects extraordinary variety of Indian corn, from which we condense the following:

Last spring he planted twenty-four grains, procured from Mr. James R. Thomas, of Waverly, Ill., in hills four feet apart, one kernel in a hill. About the first week in May eighteen grains came up, which at first did not differ in appearance from the ordinary corn. When about eighteen inches high, shoots (not suckers) began to spring up from the *roots*, to the number of seven in some hills. These secondary shoots soon outstripped the main stalk, and grew to the height of ten feet and over. Up to the first week in August there was little prospect of any yield of corn, though there were incipient ears numbering as high as thirty on a hill.

During August those ears developed rapidly, so that seventeen hills contained eighty-two stalks, bearing one hundred and twenty-three good ears and one hundred and five immature sets for ears, which our season is not sufficiently long to mature. All this resulted from only seventeen kernels. One of the hills had six stalks, thirteen mature and eighteen immature ones.

The corn was in an unfavorable location, being shaded on the east and west by trees, which shut out the morning and evening sun. The rapid filling out and growth of the ears in September, is represented as really astonishing to all who watched its progress. The peculiarity of the variety seems to be, first, a full development of stalks and leaves from shoots springing from the roots, and afterwards a rapid growth and maturing of the ears during August and September. Mr. Thompson states that he shall have some of the seed to dispose of.

He also forwarded to us a copy of a letter from Mr. Thomas, dated Waverly, Ill., Aug. 17, from which we make the following extracts:

My crop of Wyandott was planted at intervals between the 1st and 15th of May, on a flat piece of land which had been cultivated four years. A cold, wet spell of weather setting in about a week after planting, and continuing some two weeks, chilled the earth to such a degree that the seed was tardy in germinating, and greatly retarded in its growth after coming up. A severe frost cut the stalk completely off, compelling me to replant about one-half my crop. I also had the cut-worm, the mole, and the field-mouse to contend with, each of which attempted to outvie the other in their destructive pranks, and all of which were very pestiferous to farmers in this section the first of the season. But notwithstanding all these difficulties, my crop of Wyandott is pronounced by the farmers who have visited it to be one of the greatest wonders ever witnessed by them. The stalk is about twelve feet high, as large in circumference as an ordinary man's wrist—averaging four stalks in a hill, and bearing from eight to twenty ears, and some as high as twenty-four ears to a hill, and all from one grain. Why, my dear sir, it looks or sounds Munchausen-like, but it is here in my crop incontestably demonstrated; and, if nothing unforseen occurs to prevent, will be witnessed by thousands of persons at our State Fair, at Chicago, next October.

I planted five acres, and allowing for devastation before mentioned, I presume I shall have about four acres to gather. My crop is filling out rapidly, though late. I noticed particularly in 1854, that the Wyandott matured much more rapidly than any other description growing, and this fact has been remarked to me by several this season. I sincerely hope it may prove so in your section. You are situated, I believe, in latitude about 41°; we are in about 39° 40′—a slight difference in our favor. On the other hand, the difference in longitude being some 15°, is in your favor. However, a short time will test to the satisfaction of all, whether it will answer in your climate.—*Amer. Agriculturist.*

The Loves of the Spider.

Did the reader ever watch the terrible coquetry of the female spider? We say terrible, for it is a perilous game for the young gentleman; if he misinterprets her looks and actions, if his vanity or the thoughtlessness of youth induce him to imagine he has inspired a passion deeper than coquetry, she does not, as our coquettes do, draw up her head and cooly declare "there must be some mistake," but pounces on the unlucky coxcomb, and slays him on the spot! Prescient of such a possibility, it is wonderful to see how stealthily and humbly the gallant gay Lothario pays his court.

Address of the Hon. Fred'k Watts, at the Fifth Annual Exhibition of the Pennsylvania State Fair.

The last few years has given birth to a new era. Our attention has been arrested and our minds suddenly called to contemplate the importance of agriculture. Cultivators of the earth have been invited, aye, pressed to take their place in the race which is now being run in the world's progress. They have been startled by the sound that has been made for them; and they begin to think that there is work to do beyond the precincts of the farm. They begin to feel, too, that the spirit of the enlightened mind which alone can give a right direction to the operations of matter has been at work for them.

To those who have put their hands and hearts to the work of promoting this great interest, there is a pleasing consolation, and effective encouragement, too, in the reflection, that they are upon the flowing tide of public favor; that those they benefit now look with confidence and pleasure upon the efforts they make; that whilst the fluctuations of business, the casualties of commerce, the interruptions of trade, the disturbances of society itself, are but incidents of the moment, only occurring to be as soon forgotten. That whilst amidst all the other and conflicting elements of busy life, the pleasing anticipations and profitable speculations of one class are the dreaded forebodings and dire calamities of another; all classes unite in the fervent prayer, the kindly sympathy, the liveliest hope, that success may crown the effort of the farmer. His art now commands the study of the philosopher, the science of the scholar, the eloquence of the statesmen; the whole world, with an unanimity which no other subject can command lifts up its sympathizing voice to cry, "God speed the plough."

There is a reason for this to be found in the fact, that the product of this art contributes more largely than any other to human happiness, and that the art itself is better adapted to human skill.

How shall we best promote this great object, is a question which addresses itself to all of us with a force which must command our attention.

First, then, study to know the subject which thus excites our common interest. Is it enough to understand, that if the earth be stirred, and the seeds be sown, that their product and all else is a natural result of God's providence. Is it enough that we should be told and believe that the plough is the best implement with which to till the earth, and that seed sown and gathered by the hand of man is all that is necessary to enable us to drag through the natural period of our existence, thus made toilsome and miserable? Is it enough, as to ourselves, to know that we live and move and have our being? Is that large portion of mankind who are engaged in that great first work of the world, content thus to grovel and crawl, only occasionally to be startled into an attitude of amazement at the products of the minds of men around them; and again to relapse into the contemplation of their own inferior condition? We answer emphatically, no! With regard to your own occupation you should rather look upon this lovely earth as the beautiful landscape of God's creation, embued with the powers of life to breathe and feed, yielding its elements and products to the delicate and nursing operations of your hands.

Whilst you follow the plough, you should perceive its use; you should see in it, how the polished mind of man has infused mechanical science into its structure. You should mark well the work it has to do and its adaptation to the work. You should contemplate those seeds you commit to the earth, and believe that it is not the work of chance that they grow —and that they too are embued with the germinating powers of light and life, characterized in their existence by the qualities of good and bad. And you should know that perfect analogy which characterizes the life at its conception, the growth in its progress, the product of its results, and the final death of all animal and vegetable creation. But above all and over all, you should contemplate yourselves; that you are a part of the special work of God's hands, placed here and employed to direct and govern all these things. They are no artificial objects on which you are to expend your happy thoughts and lives, they are the delightful things of nature on which you operate, and nature operates with you in all your labors and sweetens them to your contented spirit. This is the grand secret of your constant attachment to and engagement of agricultural pursuits. You work with nature and only modulate and benefit by her functions, as she takes up and quickens and completes the work of your hands. There is a living, moving, acting principle in all your labors which distinguish them from other pursuits. The earth yields its strength and increase to the seed you cast upon it—to the cattle that walk upon it—the winds seem to blow, the rains to fall, and the waters to run for you. The very frosts and snows of winter give salutary checks to the rankness of vegetation, lighten the soil, and destroy what is noxious for you—and every principle of animal and vegetable organization and existence co-operate to support and enrich you. There is a charm in this which must last while the spirit of man feels the stirrings of the spirit and power of God around him.

Farmers do not reason thus, but they feel it, and it is this mysterious and self-acting charm which has infused its sweetness into the hearts of all rural people, in all ages of the world.

That farmers are not as intelligent and well informed as a parallel grade of society in towns, we mean to assert—that they are not as truly aware of and united to defend their real interests, we mean to proclaim. Their scattered and isolated mode of life weighs against them on these points—but that they have more sincere hearts, and a sounder morality, is as indisputable. They have a pureness of purpose, a simplicity of mind as well as manners, that is more than an equivalent for the polish and conventional customs of society; and with it a cordiality which is only to be found in the good, homely, hearty hospitality of a country house.

We have thus endeavored to impress upon you that, whilst you have much yet to learn, yours is a happy condition in life; and that your pursuit is so essential, and its improvement so important to yourselves and the world at large, as to claim for it a high place in the estimation of mankind. And it is for you to make this claim, for the world never respects the man who does not respect himself.

You are to take your place, then, in that race of honorable competition into which all the trades and occupations of life have entered, and whose goal is the honor and glory of exalting their own profession, and adding so much to the sum of human happiness. Who possesses advantages superior to yours? With every quality of soil, and with a climate which breathes into all the essential vegetables the breath of life, and into man the atmosphere of health; what do you want but to call into action the native strength of your own mind and the energies of your own hands.

And in this connection let me disabuse your minds of the hackneyed and thoughtless expression that farmers and their societies should have nothing to do with politics. It has been quaintly and wisely said, that "politics is the science of government;" and in the operations of that government you are the operatives, and you are in duty bound to take an active and energetic part. We mean, not that miserable conspiracy among men, which has no other object than the pursuit of that power which gives to one party and takes

from another—whose only principle is centered in the "loaves and fishes." But we do mean that system of ethics which regards the honor of the State and the welfare, the prosperity and interests of its people. To this you are bound to look, or failing, to be abused and your interests trampled on.

Have you ever given yourselves the trouble to inquire whether the existing laws give sufficient protection to your rights and property? Has it been the subject of reflection with you, that the value of all your possessions is dependant upon the protection which the law affords them? Do you know, and if you do, have you inquired into the reason why, that to steal a shilling from a merchant's desk is a crime, whilst to steal your fruit or your growing corn, or to tear down and carry away your fences, is no criminal offence at all? That whilst the merchant's shilling is protected by the fear of solitary confinement and labor, you are referred to the tardy and fruitless process of a civil remedy to recover damages from the worthless thief. Has it never occurred to you that you have not been sufficiently felt in the Legislature of your own State to demand a redress of such evils; for these are but some of them. Have you been taught by the history of the age in which you live, that whilst, at the bidding of political power, light-houses, buoys and breakwaters are springing into existence to enrich the merchant, tariffs are enacted to protect the mechanic and the manufacturer—that whilst military tactics and engineering are taught at the expense of the government, ships and men are employed in the science of meteorology—and rights and inventions protected by public laws, there is no care for you. That when a contract of commerce and navigation, clothed under specious disguise of a "reciprocal treaty," is to be formed, and by which you are to be met by foreign competition in the gates of your own domestic market, your interests are no where. Amidst all the discussions which you have heard or read of these departments of the government who so admirably manage the education of the army and navy; and who carefully protect the interest of commerce and navigation, have you ever heard of a department of agriculture? Is there even a bureau or a clerk, except that excressence which illegitimately hangs on the skirts of the Patent Office, which throws any protection over your interests, that are three fold greater than the aggregate of all the rest?

We put these questions that your attention may be drawn to the fact, that neither the numbers you count, nor the great importance of the business in which you are engaged, has ever given you that rank in society which secures for you all the blessings of a well managed government. Our object too, is to ask of you to look seriously at this subject, to assert boldly and fearlessly your rights and your wants and to stand together and by your numbers command respect.

But to effect this there must be mind, there must be cultivated mind; for we should never cease to remember that intellect is that "talent" which the goodness of God bestowed upon the creature of his own image, not that it should be buried in the earth, and restored upon the return of its Lord and Master, in its original simplicity, but that it should be cultivated, enlarged and appropriated to his great design. It is demanded of us all, then, that we should put our hand to the noble work of education; and, especially, that we should direct that education by a course of study which will fit the mind and adapt the energies of the body to that expansive, interesting and delightful subject in which you are engaged, and for which the world has yet done so little.

I trust that you are already impressed with the idea, that there is no reason why knowledge is not turned to the profitable account of the farmer, as well as the lawyer, the merchant, or the statesman; and when we speak of *profitable account*, we mean that gain which not only increases our worldly possessions, but fits us for the gratifying association of each other; for the appreciation of the work of our own hands; for teaching whilst we are yet being taught, and for the intelligent understanding of all those elements and rules, too, of God's creation, with which we habitually deal.

The education which is diffused by the literary institutions of the present day, is unprofitable for you. And whilst we would not detract by thought, much less by expression, from the value of their teachings, preparatory to the pursuit of professional life, yet we cannot but look upon that sedentary process of a boy's study, and the brilliant result of his academic honors, as the attainment of a state of total unfitness for the practical art which you pursue. His body is without that muscular strength which gives energy and activity; his hands too soft and delicate to grapple with the implements of agriculture. But *especially* has his mind received those impressions of the pursuits of after life, and that view of the smooth and easy path by which he is to follow some one of them, as to make him turn with fear, if not disgust, from the fireside of his own father. In his youthful estimation he has so far outstripped his brothers and sisters, and even his parents, in the delicate conventionalities of life, as to make his association as disagreeable to *him* as it is irksome and formal to *them*.

It is a serious reflection, that in all the progress which the art of teaching has made; that in all the advantages which the learned institutions offer for the instruction of our youth, our country yet affords no school where the combined science and art of agriculture are taught. It is permitted to grovel along without the aid of other than the common mind, educated in the mere common school.

Looking, then, at the mass of mankind who pursue the occupation of the farmer; at the immense amount of capital in their hands and under their guidance, a spirit of philanthropy should be excited, principles of political economy awakened, and that virtuous ambition which always stirs the hearts of men to deeds of noble action, should prompt you to devise some plan by which the hands and hearts and minds of youth should be made to work together in the acquisition of that kind of knowledge which will give to a farmer and his pursuits, that interest which will command the energies of his mind, as well as the labor of his body, and induce him to take that elevated rank in his intercourse with men which that knowledge will give him.

Regarding the personal comfort, contented spirit and daily happiness of the farmer, this subject commends itself to your consideration. The body whose uneducated mind has never been elevated to the capacity of reason, whose ideas have never been enlightened to contemplate the light and life which exists in every atom of God's creation with which he habitually works, goes to his daily labor as a measured task, having in it no other interest than the lapse of time for which he must toil. But he whose enlightened intellect grasps the subject of his work; who can see the beautiful workings of Providence in imbedding germinating life in the bosom of a seed; who can understand the powers and chemical combinations of the earth, which causes that germ to spring into existence and life, "to bear fruit after its own kind;" who can appreciate the beauty and mechanism of that plant Providentially, and therefore, wisely constructed to meet the exigencies of heat and cold, drought and wet; who can look upon the mysterious workings of the mouths and lungs of the earth itself, whilst they gather food and light but to disseminate them through the organs of plants; who can examine with the eye of a mechanic, the implement of his art, and measure its fitness for the object of its employment. He it is who has elevated himself to the standard of a man; who has softened down the toil of labor to a pleasant

occupation; who has afforded the example to the world, that the pursuit of agriculture is the pursuit of learning and happiness, as well as wealth.

How is this, so desirable an end to be accomplished? In a word: by the adoption of a system of education which will combine the appropriate teaching of the mental and physical powers of men, and to give it practical effect, that such teaching be conducted upon the principle and in the spirit of enlarged economy. That whilst its advantages are brought within reach of those certain yet moderate gains of a farmer, those generous and noble impulses of the human heart which an enlarged intellect should always develop, may not be trammelled in their natural tendency to expand.

That the active, energetic exertions of the body should be brought into requisition to afford the means to educate the mind. That each should contribute thus to the aid of the other, and the perfection of both, is a beautiful and striking system for the accomplishment of a great and philanthropic purpose. Whilst a boy feels that he is working out his own position in after life, he is embued with that noble spirit of self dependence, which enables him in all after time, and amidst the exigencies and troubles of life, and, indeed, in any emergency, to take a firm hold and give a right direction.

What, and how much, should *we* do to give practical operation to these views?

To farmers, permit us to say, you have an amount of interest in this subject which involves not only the more sordid consideration of property and its value, but the high toned character, the temporal happiness, and we had almost said the eternal welfare of your children. And, to which let me add, that which you should never cease to remember, that numbers may command respect; and then recur to that admirable, practical and commendable feature of the government under which we live, that the policy is wise which produces the greatest good to the greatest number.

It is for you, then, at all times, and on all proper occasions, to demand that in the practical workings of society your interests must be cared for; that whilst schools, academies and colleges receive the fostering care and bountiful endowments of the government, the farmers' school demands the like support. We would have you, too, constantly summon yourself to the bar of your own conscience, to contemplate the duty you owe to your own children; to compare the life of ignorance as it gropes along its difficult path; which seems to have no other object than that it may breathe and live and die—with the brightened intellect of the intelligent man, who acts because he thinks—who moves in a sphere of usefulness and good, and whose steps *mark* the path he treads through life.

To the merchant and mechanic, the active and energetic *motive powers* of busy life, we address our claims, and ask of you, to look with favor upon any project which shall have for its object the education of the farmer. The busy marts of men are filled with the products of his labor; his success and profits contribute largely to the trade and commerce which is the production of your enterprise. Whilst the abundant yield to the husbandman enriches him, the result is felt in every department of the mechanic's shop. As, then, you move and make your impress upon the minds of men, let it be tempered with the idea that all business, whether in the merchant's store, the mechanic's shop, or the mariner's ship upon the ocean, is dependent for its working elements upon the products of the farm.

To the professor and the student—to you who already possess the lights of reason, and enjoy the fruits of knowledge, we appeal with confidence, that your influence may be thrown into the scale of agricultural progress—that whilst you have in your own hands that helm of power which gives direction to the elements of government, you will always have in mind, that to promote the true and efficient principles of political economy, to expand and increase the influence of that virtue, whereby alone we may hope to maintain our own free government and laws, is to educate the farmer. We ask of the statesman whilst he advocates the interests of his constituents at the bar of the Senate, of the lawyer who advocates the cause of his client at the bar of justice, and of that sacred office which advocates the cause of men at the bar of Heaven, that you may ever remember the magnitude of your temporal as well as eternal welfare.

Let us not forget to exhort those whose influence is always and so strongly marked upon the characters of men, from their cradle to the grave, to think of these things. The mother whose affections root so deeply in the existence of her own offspring, whose anticipations are oft stimulated to the painful anxiety for the welfare of her own child, who watches its progress in life with an eye to doubt and danger, whose hopes may be elevated to thankfulness to the Giver of all good, that he has smiled graciously upon the career of her own dear child; or whose fearful forebodings may be realized in the spectacle that he is despised by the society of men, and frowned upon by the attributes of Heaven. We beg leave to remind you, that the influence of your power should always be felt in the impress of your continued influence.

In conclusion, we have a word to say with regard to these our annually recurring exhibitions. It is one of the characteristics of your occupation, and, as it has been already remarked, yours is necessarily an isolated mode of life, you have not the advantage of constant intercourse in the busy marts of men, where circulates the knowledge of the ever changing progress of things. Improvements in your own art, so far as you are concerned, lie buried in the mechanic's shop. The descriptions which your journals communicate, are often the unintelligible *foreshadowing* of something new; the marvellous accounts of the products of the field but serve to excite your incredulity. But *here* all is reality. You meet your friend who is embarked in the same enterprise of life, and whose thoughts and hearts are congenial with your own. You *see* many of whom you had before but *heard*. And here, too, you learn to realize the force of numbers, of intelligence, of strength, of which you are composed, and that power which may be wielded by your will. You carry hence to your homes, in your mind's eye, the beautiful models of your art, the judgment of their use, the calculation of their value. And you see those marvellous productions of the soil, which serve to expand your own views of the extent of the workings of your own skill. These are the delightful points in your life, to which the memory recurs with pleasure, and therefore we would have you to remember that these exhibitions are yours. That whilst you are the authors and finishers, no one of you should ever fail to be their friend and their patron.

Extracts from an Address delivered before the Susquehanna County Agricultural Society by A. M. Spangler, at the Annual Exhibition at Montrose, Sept. 10th and 11th, 1855.

* * * * * *

In the practice of an art, which includes a greater variety of operation, and involves a greater amount of scientific principles than almost any other—a profession demanding far higher qualifications, and more thorough and systematic preparation for its successful prosecution than very many of those styled the learned ones, we find comparatively few who are willing to admit that any previous training is necessary on the part of those who follow it. The youth who is destined to become the builder of a shoe, to fit a garment to a dandy's back, or wield the hammer in the smith's shop, is required to serve an apprenticeship of years; (and this, permit me to remark, is perfectly right and proper,) but, for the profession of the farmer, no such apprenticeship is deemed necessary. As has been facetiously remarked, men take to farming as young ducks do to the water—by instinct. When they have tried other pursuits, whether mercantile, mechanical, or professional, and have proven themselves unfit for either, they are then regarded as *fit* material out of which to manufacture farmers. How frequently are the likeliest sons of the farmer sent to college, installed behind the merchant's counter, or placed in the lawyer's or physician's office to become disciples of Blackstone or Galen; while the dull boys—those who give no promise of brightness of intellect—no keen powers of perception—are kept at home to be made farmers of. Do not facts such as these give unmistakeable evidence that many farmers do not even respect their calling,—preferring to see their sons become delicate measurers of tape and calico, or occupying subordinate positions in already overcrowded and non-paying professions, rather than intelligent hard-fisted yeomen? Is it surprising that American husbandry is not advancing as it should? When farmers themselves are ashamed of their profession, have they a right to suppose that others will respect it as it deserves to be? Fortunately, the number of those who are thus forgetful of the respectability and dignity of agriculture, bears but a small proportion to the whole; but, whatever their number, it is too great. An eloquent English writer, whose opinions and counsels have thrown a flood of light upon the pursuits of the agriculturist, thus aptly discourses upon this reprehensible indifference: "How monstrous is it, that, while one man is apprenticed seven years to learn to make a shoe, another is not apprenticed at all in order to manage a farm—that while one is required for many years to be both an apprentice and a student in order to make the contents of the statute book bear upon a case of litigation, another is not required to be either an apprentice or a student in order to make the experience of all countries and ages of the civilized world, and the principles and discoveries of some of the most profound and complex of human sciences, bear upon the diversified and multitudinous practices of agriculture? One year to a shoemaker's apprentice, and three years to a young lawyer, ought to be every particle as effective as seven years to a candidate for farming; and, with one or two exceptions, not an artificer, an artist, or a professional man, exists, who requires more special training, or a larger amount of technical knowledge, than the farmer, or who possesses equal facilities for turning a liberal education to excellent practical and profitable account. Were the next generation of farmers all over the civilized world to be educated comparatively with other men in something like the proportions of their callings, human society would at one move, experience almost as great a transition as when it passed from the degradation of the feudal ages, to the dignity and refinement of the 19th century.

Farmers of Susquehanna county, in presenting these facts in their naked truthfulness, do not suppose that I design any reflections upon your system of farming, or upon your respect for your profession. Nothing could be farther from my intention. My remarks are intended for general, not individual or sectional, appreciation. It were far more pleasant to be able to say, behold how the yeomanry of our land are building up their profession. But why should we apply this flattering unction, when a thousand evidences to the contrary meet us at every step. Far better know the truth as it is, and knowing it, provide a remedy for the evil. The remedy, as you will probably infer from the remarks already offered, is education, both intellectual and physical. The day has arrived when the incubus which has so long fettered the energies of the farmer must be removed. Common sense, sound reason, duty to mankind, and duty to ourselves, demand it. It will not be fully accomplished in one, nor two, nor twenty years; but the day of triumph is dawning, and in the dim vista of the future, as well as in the evidences already surrounding us, is discernable the greatness with which practical applied science, combined with our conceded skill and enterprise as a people, will certainly invest our great national pursuit.

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Having endeavored thus briefly to direct your attention to a few points illustrating the *money* value of science, allow me in conclusion to say a word in its behalf on other and higher grounds—a word for scientific agriculture for its own sake.

It will, I presume, scarcely be denied, that the man who tills the soil scientifically—intelligently—derives from it pleasures, which the less informed, hap-hazard husbandman can never know. Every leaf, and bud, and flower, possesses for him an interest which nothing short of a knowledge of their beautiful organization—their wonderful functions—and the mysterious processes by which nature produces and re-produces them, can give. It is difficult to conceive of the possession of such knowledge without connecting it with the fuller developments of the noblest attributes of his nature—of those loftier thoughts and feelings which leads from the intelligent contemplation of nature's mysteries "up to nature's God." I repeat, therefore, that the farmer who tills the earth understandingly brings into continued and healthy exercise those higher faculties, the development of which, while they make him a wiser, also make him a better man.

A knowledge of scientific husbandry teaches its possessor to *respect* his profession. Instead of regarding it as a calling demanding the exercise of his merely physical abilities, he finds in it allurements of a character calculated to enlist all his intellectual sympathies and

and powers. Free from the anxieties and perplexities of the merchant or the professional man, and surrounded by influences favorable to health of both body and mind, he has every thing to encourage within him a feeling of lofty pride and independence. The book of nature is constantly open before him. From its pages he learns her laws, and finds in their study a source of pure and exalted happiness. He looks upon his profession with feelings of pride and pleasure, because he finds it an art intimately associated with the highest attainments of human genius. The beauties as well as the bounties of nature are unfolded to him. His pursuits are in admirable keeping with all that is beautiful and instructive in the animal and vegetable world, and they implant in his bosom a feeling of honest independence and self respect, of which nothing can ever deprive him.

Respecting it himself, he teaches his children to respect it likewise. For him the learned professions have no charms. He does not sigh to see his sons figuring behind the merchant's counter. He has seen thousands of young men rushing with blind haste into professions already crowded to overflowing, only to meet with disappointment, and not unfrequently with poverty and shame. Turning from this mad chase after distinction and wealth, he regards with conscious pride his own peaceable and independent calling, knowing that intelligent, well directed industry will always meet with a full and honorable reward. He invests it with all the charms which a cultivated intellect can bring to bear upon it, and by intelligently pointing out its superiority over almost every other human pursuit, teaches the sons who are to succeed him a proper reverence for the profession of their parent.

He has learned to know that "knowledge is power"—moral power—and therefore hastens to throw around his children the bulwarks he has found so efficient in the hour of temptation, when the proudest and strongest tottered and fell beneath the allurements of the tempter. His fireside is the home of pure enjoyment. The trashy literature of the day finds no place upon his book-shelf, for he has discovered a world of treasure in those volumes which open to him the hidden mysteries of his calling, and these treasures of knowledge are imparted to those who look to him confidently for counsel. Thus encouraged by a father's example, the sons forget their longings for the empty pretensions of city life—they wield the scythe or delve with the spade with the lofty consciousness that they are engaged in an occupation than which none is more dignified or ennobling—a calling which "leads the feet that have followed the plow through many a weary furrow in the field, to stand on a level with the proudest statesman in the councils of the nation"—a calling, one of whose most impressive lessons is, that

> "The rank is but the guinea's stamp.
> The man's the gow'd for a' that."

Look abroad over this land of ours, teeming with the richest of God's blessings, and crowded with all the elements of greatness—a land of unequalled fertility, with a climate adapted to the growth of almost every plant or tree necessary to the comfort or luxury of man. To us, the nations of the old world look for supplies when their crops fail. Such is the immensity of our agricultural resources, that nothing is wanting to make the United States the granary of the world, but the proper application of science to the cultivation of her soils. To accomplish this great end in part, at least, is the duty devolving upon the farmers of the present generation—a duty we owe to ourselves, our children, and to our country. How many of those now present are discharging as they should this high trust? Very many I hope, but if there is a single one who is remiss, to him let the truths feebly presented carry the conviction of his error. If there is one farmer within reach of my voice, who has failed to supply himself with some at least of the thousand sources of valuable information with which the country is flooded, and which may be procured almost for the asking, (so cheap has agricultural literature become,) to such an one I take the liberty of saying, friend, you are in error! If there is one here who opposes the views presented, because to him they smatter of what is called *Book-Farming*, (which, by so many who delight in being regarded as practical men, is wholly discarded—men who do not believe that science has aught to do with the cultivation of the soil,) to such an one allow me also to say, friend, you are in error!

Why do you form agricultural societies, and why are exhibitions, such as the one of to-day, held? Is it not that the farmers of Susquehanna county may be assembled in a grand fraternal meeting—interchange thoughts and sentiments in regard to their profession—relate to each other their experience, and by comparing the products here exhibited which are the results of one system of culture, with those the result of another system, learn from the comparison, that which is best adapted to their particular purposes? An agricultural periodical is in its design almost identically the same. It is intended to be the vehicle of communication between farmer and farmer. Through its pages the well informed practical agriculturist conveys to its tens of thousands of readers the results of years of experience in the cultivation of some particular crop or crops. This experience is thus made the property of all, and is it any the less valuable because it is presented through the columns of an agricultural periodical, instead of being communicated verbally? Horace Greeley, in an address delivered before the Indiana Agricultural Society a few years since, illustrates this point so aptly, that I cannot forbear quoting a few sentences:

"What is in effect contended for by the advocates of book-farming is simply this—that a farmer, like any artisan, while he needs practical experience, *may also profit by the practical experience of others.* For example: A new plant or vegetable is introduced, which our anti-book farmer concludes to try, though totally ignorant of its nature and season. Let us suppose the nearest neighbor who has ever grown this plant lives five miles away. Now, will not this new experimenter, if he have a decent share of common sense, ride over and ask the experienced cultivator what soil is best adapted to this plant; what manures are best for it, what time it should be planted or sowed, how cultivated, &c., &c.? Plainly, it would be sheer madness for him to omit such inquiries, and go on as if there had been no preceding experience, to answer all these questions and determine all these points for himself, by hap-hazard planting on every va-

riety of soil, at every possible season, with any or every sort of fertilizer! By so doing he must spend several hundred dollars to determine what he might readily have ascertained at the cost of a dollar. Well; if he could turn to the proper page of an Agricultural Dictionary or Periodical, and there learn exactly when this new plant should be sown in this latitude, how manured, how cultivated, &c., would not that be still easier and cheaper than to ride over to his distant neighbor's? Would it not be highly probable that the directions contained in the book, being founded on a wide range of experiments, would be more reliable and complete than his neighbor's counsel, based on his narrow personal experience? A prudent man would probably consult *both* book and neighbor, and then follow either only so far as his own judgment should dictate; but how can any one approve his taking counsel of one man's experience, yet condemn a course which is, in fact, but paying deference to the experience of many thousands?"

But I have already detained you longer than I should. Allow me, therefore, in conclusion, to remark, that neither novelty or originality is claimed for what has been said. It has been my endeavor to present in as familiar a manner as possible some few of the truths, a knowledge of which is indispensable to successful farming; and if I have succeeded in convincing a single farmer who has hitherto stood aloof from the progressive movements of the age—that his course is in diametrical opposition to his best interests, both moral and pecuniary, a part, at least, of the object sought in coming into your midst has been accomplished. But I will hope for better results. There is a brighter day coming for agriculture. One by one the ties which bind the present generation to the "good old ways" of past ages, are being severed. Science and practice have joined hands, and though we dare not hope that *we* shall all live to see the day when the chemist, the geologist, the botanist, or the machinist, will so far have overcome the obstacles which now lie in the pathway of perfect success, as to make it easy for *every* one who cultivates the soil, still we have the indications that our sons and daughters *will*. Let us aid, therefore, in hastening this happy day by throwing around those who are to succeed us all the influences calculated to develop their intellectual and moral faculties—by striving, as far as lies in the power of each, to stimulate their budding energies by our own example—by placing within their reach all the means necessary to keep pace with the advancing spirit of the age—by teaching them to respect the profession for which they are preparing themselves, and that the intelligent cultivation of the soil is not only one of the most dignified, honorable and independent of all earthly pursuits, but that to advance its interests in every possible way is a duty they owe themselves, their country, and mankind.

Willow Culture in Summit County, Ohio.

EDITOR FARMER—Sir:—Last April, I bought of Geo. J. Colby, of Vt., fifty thousand Willow Cuttings. We got through sticking them the 15th of May, and now many of the sprouts are six feet long, and all will average about four feet. They will pay well this year, if there should be sale for the cuttings. My ground was only ploughed, for the wet weather commenced before I knew that I should obtain any cuttings, but we were particular to put the cuttings clear through the sod, into the soil below, and only a few of them failed to grow. The best time to prepare the ground is in the fall, for most of the land, that is suitable for the willow, is too wet to till in the spring, early enough. It takes about three day's work to stick an acre with the cuttings, it should be done early in the spring, before other work commences, so that it can be done well without costing too much per acre.

From what I know of the willow trade and the cultivation of the willow, there is no doubt, in my mind, that farmers will find it very lucrative to grow them. Most every farmer has some land on which nothing but trash grows, which is just the land for the willow.

Yours truly, M. D. EVEREST.

Macedonia Depot, Sept. 15, 1855.—*Ohio Farmer.*

Retiring from Business.

It is very common to hear persons who are engaged in active concerns of life, express a desire to become speedily rich, so that they may retire from business. This appears to be almost universally the object of the business of man's toil. But we venture to say that in no respect were people ever more generally deluded than in this. They expect to find nothing but happiness upon leaving what they have been accustomed to regard as the harassing cares of business—they actually find nothing but misery. In nine cases out of ten the man who has retired from business and laid aside his active habits, finds cause daily to regret the step he has taken, and to wish himself back again. Happiness is not to be found in idleness, but in a faithful discharge of the active duties of life. Man was not intended as an idle being, and it was a wise ordinance that by the sweat of his brow he should eat bread. The necessity of activity and labor imposed upon the human race tends to the promotion of virtue and of substantial enjoyment. It is a true remark of Miss Sedgwick, that "one cannot be very unhappy while there is enough to do."

Watermelon Molasses.

An article has been going the rounds of the papers about the practicability of making molasses from watermelons. We felt incredulous on the subject, but have recently been presented with a bottle of it by our friend PHILIP A. MASON, of Woodbury, New Jersey, who is well known in this market as a successful grower of the mountain sweet watermelon. It was really a nice article, clear, sweet, and of a very pleasant flavor. He informed us the only process was to boil down the pulp to about one-half. The boiling was continued for several hours. Whether it will pay to manufacture molasses in this way is another question, and a matter of very great doubt.

Horse Shoe without Nails.

A Yankee by the name of Short has invented a horse shoe which requires no nails. He makes the whole in two pieces, employing, in addition, two small screws to aid in screwing the parts together. Both are made of malleable iron—the lower portion, or 'sole' being very similar to the horse shoe ordinarily employed, but with

a groove around its exterior, and without nail holes. The upper portion, or 'vamp,' is thin, and has a flange projecting inward from its lower edge to match the groove in the sole. The parts are so arranged as to secure a tight and firm connection, and the whole is made additionally secure by the aid of the set screws before mentioned at the heel. A shoe of this kind once fitted, the vamp may be made to wear out a great number of soles. The exterior may be highly finished and plated with silver, which gives a very flashy appearance to a team of lively horses, or the shoes may be enamelled jet black when intended for white or gray animals. One practical advantage to be derived from this style of shoes is the facility with which they can be removed or exchanged, so that a skillful hostler may exchange the shoes, or rather the soles, on every occasion when the presence of ice or the like renders it desirable, and it may even be expedient in extreme cases of exhaustion, as with race horses, to remove the shoes altogether for a time, and allow of a more refreshing rest.

More Work for the Season.

I. *Preserve all the straw and fodder you can.*—If it does not find use now, it may before you are aware. Keep such coarse food under cover, (if you have room,) or well stacked out, till you need, and you will find it better than money at interest.

II. *Provide shelter for all your stock.*—From one-fifth to one-quarter of your fodder may be saved in this way. Or, what is the same thing, from one-fifth to one-fourth more stock may be wintered on the same food. Besides this, the stock will be more comfortable and in better condition. Nor is the time to attend to this class of matters. The cold autumn storms are at hand, and the cattle and sheep should not be chilled by them. Such drenchings are a poor preparation for the cold of the coming winter.

III. *Sell off, or fatten and kill the weak and the old in your flocks and herds.*—It is far better to make moderately good beef or mutton of a portion of your stock, than to lose them and the food they have consumed, and the labor of caring for them, after the winter has nearly gone.

Had the farmers of the West pursued this course in the fall of 1854, they would have avoided immense losses. Had they thinned out their stock in this way, the proceeds of slaughtered animals would have purchased food for the rest. And they would have had last spring more stock, and that stock would have been in better condition. For as it was, the poorer stock died worthless, and the rest came out emaciated and wasted, because the food they should have fed to them had been thrown away on those that had died.

IV. *Let the amount of your stock be considerably less than you think your supply of food will keep in good condition.*—The tendency is generally in the opposite direction. Men do not get the price they desire, for their surplus animals. They let them run on, hoping to secure a more favorable market. Winter finds them with more stock than they want. They dislike to sell or slaughter at a sacrifice. They will try to winter the whole. It may be a mild winter. They will *buy* hay or corn, if they need it. The last of February comes, and their fodder is consumed. Several cattle, and a half a hundred sheep have died. Corn and hay are high; and now they feel too poor to buy; so a large portion of their stock has been swept away! They begin the new year with a dejection which weighs them to the earth. They might have escaped all this, by keeping their stock quite within the limits of their supply of food.

V. *Provide excellent teachers for your children, and have a good school for five months, before time for plowing next spring.*—If you should hire a man to break your colts, you would get the best man you could find, if his services cost twice or thrice as much as those of a man who knew nothing about horses. You would ask, 'What are five dollars or ten, compared with the use and value of a horse for his whole life-time? This would be wise. Exactly so, only with a thousand-fold more emphasis, with respect to your children. Secure the best possible instruction for them *at home:* make your district-school one of the best *select* schools. You will thus save money, for your children will not be tempted to run away to some 'Academy,' wasting their time and your dollars to little purpose. A higher style of thought and manners and morals will quietly spring up in your own midst. And your children will be far more likely to escape those pernicous influences which so commonly follow an exile from the purifying and ennobling atmosphere of the parental hearth.

A good school, viewed in its power over the young soul, shaping its character and destiny, is of such moment, that a few dollars a month in the price of teaching is as the dust of the balance in comparison. As among the most important, therefore, of the tasks of the season, do we mention that of securing a good teacher for winter-schools. Home education must be aimed at as far as possible. None other will meet the wants or the means of the great mass of our population.

VI. *Provide shelter for the tools and carriages for the winter, and give a coat of clean oil or grease to the iron, steel, or all tools likely to rust.*—A few hours spent in this work, will save many hours next spring, and the durability of all your implements may be doubled.

VII. If you have a large family of children, or a number of hired persons whom you intend to keep during the winter, *cast about to find profitable employment for them till spring.* Provide work under cover for the stormy and severe weather. Have plenty of wood cut or split, in a good wood house. In open weather, wood may be cut or rails split in the woods, or timber may be got out for building, or the market. Saw logs may be cut and placed where they can be conveniently shipped to the saw mill when snow comes. If clearing is to be done, it may be economy to do the chopping in the winter. But be sure to save the wood, if you live within a few miles of a village.

We have suggested a few things which we think seasonable. It requires no great profundity of thought to give these hints. Yet our readers will think them none the less valuable for that. To refresh the memory at the right time, is sometimes worth a great deal, for with the multitude of things a farmer has to remember, it would not be strange if some important ones were now and then forgotten. These tides in the affairs of every man, must be taken at the flood, if they are lead to fortune. Let man be on the crest of the wave.

To Improve the Breed of Milch Cows.

"If those who are most deeply interested cannot be induced to make some effort to improve their milch cows, we must permit them to go in the old way, in which they milk their cows one-half the season and the cows milk them the other half."

We copy the above from the report on milch cows at our late Pennsylvania State Fair, signed by JOHN STROHM, chairman, R. R. REED and JOB HAYES. We believe there is much truth in it, and that through a large portion of Pennsylvania, our dairymen *continue* to keep cows, who, for one-half of the year, or nearly so, are all expense without any profit. As the report says, the cows milk their owners for six months for the privilege of being milked in return. We have not at this time the means of any estimate of the average yield of milk or butter per cow in Pennsylvania, but there is no doubt it is at least one-half of what it should be, and what it may be. Making all allowance for the difference between good and bad, a large majority of our dairy cows have not the *constitutional capacity* for deep milking, entirely irrespective of feed. A cow making ten pounds of butter will yield it on the same pasture as the one who makes but five, and, we contend, may be kept at the same expense. Farmers have this matter very much under their own control. Every neighborhood has one or more deep milkers far above the average. The real value of such cows can hardly be estimated as a foundation on which to *establish* a breed adapted for the dairy. To get up a breed of stock for feeding purposes is far more difficult, a *combination* of good qualities being required. For the dairy, deep milking only is the desideratum, and shape, color, size and feeding properties being secondary. We would select any cow remarkable for her productiveness in milk or butter, or both, without reference to any thing else, and breed her to a bull whose dam had also the same property. A heifer calf from such parents would generally inherit their tendencies. If the grandams on both sides have also been deep milkers, the chances would be very much increased. Every farmer who is a dairyman, and depends for a large share of his income on the sale of milk and butter, should raise his own cows, and spare no expense to obtain such, not only for immediate profit, but for breeding, as are adapted for this one object. As in order to keep up his stock, it is often necessary to make purchases, it also becomes important to know if there any well recognised points to select a cow, which are reliable and invariable. With the exception of the Alderney, perhaps there is no breed in which the milking property can be said to be a fixed characteristic. The Farmers' Magazine says of a prime milch cow: "The head should be small, but rather long and narrow at the muzzle; the eye small but quick and lively; the horns small, clear bended, and their roots at considerable distance from each other; neck long and slender, and tapering towards the head, with little loose skin hanging below; shoulders thin; forequarters light and thin; hind-quarters large and capacious; back strait, broad behind, and joints of the chine rather loose and open; carcase deep, and the pelvis capacious, and well over the hips with fleshy buttocks; tail long and small; legs small and short, with firm joints; udder capacious, broad and square, stretching forward, and neither fleshy, low hung nor loose; the milk veins large and prominent; teats short, pointing outwards, and at considerable distance from each other; skin, thin and loose; hair, soft and woolly; the head, bones, horns, and all parts of least value small, and the general figure compact and well proportioned."

This is such a picture as most would draw of a well shaped cow, and yet who has ever seen one combining all these points. How many of them are necessary to constitute a deep milker? and do we not often find a deep milker who has *very few* of them? We believe many a cow is spoiled for the dairy by having been stunted and kept on too scanty food *when a calf*. Calves should receive as ample a supply accordingly, and as succulent and nutritious a character of food as a cow in milk. This enlarges and gives full size to the lacteal vessels, strength and vigor to the constitution, and we are confident materially aids to make the full grown cow what we want her to be.

GUENON'S tests for a good cow, as shown by the escutcheon, we find are much and increasingly relied on by dairymen. Without being able to understand *how* they are connected, or what they have to do with the lacteal secretions, (and which may be like many other matters which we do not understand, but cannot help believing,) there is abundant evidence that they generally *accompany*, and have been fully proved by thousands of farmers to be a *sign* of deep milking. From our own observations, we know of no tests so reliable, and would advise every dairyman to procure a copy of the work.

The value of a dairy cow does not depend entirely on the amount of her yield, but also on the time she will go dry. In some of the counties of England, statistics have been obtained showing on the average all the results which go to determine the value of the cows, amount of milk, butter, &c. Of five Short-Horn cows in one instance, we observed the following as the product for the year:

One which did not go dry at all gave	4,857	quarts.
" " went dry eight weeks "	3,985	"
" " " four " "	3,987	"
" " " " " "	3,695	"
" " " eighteen weeks gave	3,383	"

These cows were in summer at grass, and in the winter on hay and turnips, with two months on hay alone.

Will some of our subscribers give us an account of the annual yield of their cows in milk and butter? By knowing what some cows do, we shall be able to determine what others ought to do.

Cranberries on High Land.

Mr. NEEDHAM, of Locustdale, West Danvers, has sent us a box of cranberries grown upon high land, which are of good size and shape and well ripened. He has about one hundred rods under culture—has gathered thirty-six bushels, which he has sold at $4 per bushel. But for the drought of last summer, he confidently expected to get a bushel from each square rod. Few men among us have devoted so much attention to the growing of the cranberry as the Messrs. NEEDHFM, or succeeded so well. Others have reclaimed meadows, and cultivated the berry successfully there, but very few have attempted it on high land.

Book Notices.

WESTERN AGRICULTURIST AND FIRESIDE COMPANION.—This is a new paper published at Pittsburg, Pa., devoted as its name imports to agriculture, horticulture, the markets, news and miscellaneous reading for the family circle. It is issued weekly, at $2 per annum in advance. No. 3 is now before us, presenting a very creditable appearance, and well supplied with excellent original and selected articles. We wish it every success. It is very proper that Pennsylvania should have a paper at each extremity devoted to her agricultural and horticultural interests.

NEW JERSEY FARMER.—Published at Freehold, N. J., and issued monthly, at $1 per annum in advance. ORRIN PHARO and DAVID PETIT, Editors; ORRIN PHARO and J. U. BARTLESON, Proprietors. The September number was the first issue of the above, and from that and the subsequent numbers, we are prepared to believe it will be a valuable adjunct to the present agricultural press and the great cause of agricultural improvement. The more of such publications the better. Not one-half of the farmers read as much as they ought to do on matters pertaining to their profession.

AMERICAN AGRICULTURIST (New York City.)—The weekly issue of the above has been dropped, and like many of its cotemporaries, it will hereafter be a monthly publication, at $1 per annum. In the new form its reputation is well sustained, and an attractive and valuable compendium offered to the farmer. The American Agriculturist has always been one of the best conducted agricultural papers in the Union, its articles being essentially practical and useful, no less than scientific.

Catawissa Raspberry.

In our July number of the present year, we inserted some account of the Catawissa raspberry, its history and productiveness, &c. Its great peculiarity of *continuous bearing* we have lately had a demonstration of in several of the canes which were shown us by JOSHUA PEARCE, of Washington city, who first brought it prominently into notice. This was about the middle of October, and they were then filled with really a profusion of berries, especially on the small lateral branches. These we were informed continued growing and bearing through the season, of which there was full evidence on the canes, some of the fruit being quite green in contact with other fully ripe. It certainly may be called the ever-bearing raspberry with more truthfulness than any other we are acquainted with. The foreign perpetual raspberries, of which we have imported several under that name, are only humbugs; but to such as are fond of fruit in season and out of season, the Catawissa may be relied on. The fruit is in size and color the same as our old fashioned purple raspberry—not often now met with since the introduction of the Antwerps.

County Societies.

We should be pleased to publish some account of the various County Exhibitions in Pennsylvania the present fall, but with one or two exceptions we have received no communications on the subject from any of the officers, whom we generally look to for such information. Scattered as they are through every section of the State, making it impossible for us to visit them personally, we have to rely on the official sources, and would be greatly obliged if the secretaries, or other officers, would hereafter keep us posted up respecting their annual elections, exhibitions and other proceedings. The Farm Journal is everywhere recognised by Pennsylvania farmers as the proper medium to disseminate information on the agricultural interests of the various sections of our great and growing State, and it will always give us pleasure to insert communications having a bearing on these interests and tending to promote a closer union among the farmers.

Cumberland County Agricultural Society.

One of our friends writes us "that the exhibition of the above society the present fall was successful in every particular, the weather being fine and all satisfied." A large collection of agricultural implements was made by BOYER & BRO., of Harrisburg. This is a new society, only organized in March last, and is already in every respect in a most prosperous condition. They have purchased six acres of ground, for which $200 per acre was paid. It is now enclosed with a good fence and several buildings for the exhibition of articles. The officers are G. H. BUCHER, President, ROBERT MOORE, Recording Secretary, F. WATTS, Corresponding Secretary, GEO. W. SHEAFFER, Treasurer, and a Vice-President in each township in the county.

Meteorology for the Farmers.

We give extracts from the interesting letter of Lieut. Maury, of the U. S. Navy, to the editor of the American Farmer, on the subject of Meteorelogy. It is a matter of great importance to the agricultural interest of the country; and it is hoped an appropriation from Congress will be made to carry out the views of Lieut. Maury. This State is already provided, through the Regents of the University and the Academies, with facilities to accomplish all that is desired in this State.—ED. JOUR. N. Y. STATE AG. SOCIETY.

OBSERVATORY, WASHINGTON, June 18, 1855.

To the Editors of the American Farmer.

GENTLEMEN—I am much obliged to you for your favor of the 9th inst. You are right; I did not intend to confine the appeal to the farmers of any "pent-up Utica." I intended to make it as broad as the land.

You ask for the plan of co-operation. It is very simple, and calls on the farmers for little more than good will.

I first want authority to take the preliminary steps, and to confer with other meteorologists and men of science at home and abroad, with the view of establishing a uniform system of meteorological observations for the land, as we have done for the sea.

If any officer of the government were authorized to say to the farmers, as I have to the sailors, here is the form of a meteorological journal; it shows you the observations that are wanted, the hours at which they are to be made; tells what instruments are required, and how they are to be used: take it, furnish the government with observations, and in return the government will discuss them, and give you a copy of the results when published—he would have at once, and without cost, a

volunteer corps of observers that would furnish him all the data requisite for a complete study of both agricultural and sanitary meteorology.

Such an offer to the sailors has enlisted a corps of observers for the sea, by whose co-operation results the most important and valuable, and as unexpected as valuable, have been obtained.

Could not at least one farmer be found on the average for every county in every State that would gladly undertake the observations? I don't think there would be any difficulty on that score. Sailors have been found to do as much for every part of the sea—on the average, ten observers for a State would be sufficient.

Now, if we could get the English government, and the French government, and the Russian government, and the other Christian States, both of the Old World and the New, to do the same by their farmers, we shall have the whole surface of our planet covered with meteorological observers, acting in concert, and eliciting from nature, under all varieties of climate and circumstances, answers to the same questions, and that too at no other expense than what each gevernment should choose to incur for the discussion and publication of the observations that are made by its own citizens or subjects.

What is wanted in a system of observation like this, is uniformity. Hence, co-operation—an agreement to observe the same things at the same times—is essential to any thing like success. We want not only corresponding observations as to the time, but we want them made with instruments that are alike, or that can be compared; and, then, we may expect to find out something certain and valuable, concerning the movements of this grand and beautiful machine called the atmosphere.

If you ask me to state beforehand what particular discoveries or special results of value I expect to make, I answer—if I could tell, I would not ask your assistance to make them. The fields meteorological are large—there are many of them, and all that I do know about them is, that there is in them *mighty* harvests of many sorts.

I make the appeal to the farming interest especially, because that is the great interest to be subserved by the scheme; and if the farmers do not really care enough about it to use their influence with their Representatives in Congress to procure the very trifling appropriation that is required to get it under way, I do not see why I should give myself any further trouble in the matter.

Will you not bring the subject in some tangible shape before the Agricultural Societies of the country? A simple memorial from them to Congress would not fail to procure all the legislative aid necessary.

Some of the leading scientific men of Europe are ready to join us in such a plan; and with authority to confer with them *officially* as to details, I have no doubt that most of the governments of the world would undertake, each for itself and within its own territories, a corresponding series of observations, so that we should then be able to study the movements of this great atmospherical machinery of our planet as a whole, and not as hitherto in isolated detached parts. Respectfully, &c.,

M. F. MAURY, Lt. U. S. N.

Messrs. SANDS & WORTHINGTON,
Editors of the American Farmer, Baltimore.

Chidham Wheat.

When at the exhibition in London, in 1851, we made arrangements for some of the above named wheat—a very splendid variety, which succeeded well in England. We received a quantity of it, and distributed it to those who we trusted would give it a fair trial for two or three years, as we felt assured it would be found, in some portions of our country, a very valuable variety. The berry is very fine—the flour equal to the very best of our white wheats; its weight usually in England 63 pounds and upwards. Several of the gentlemen who tried the wheat have made reports through our Journal. The season in 1854, in this State, was so disastrous to the wheat crop that much, we fear, of this variety was destroyed by the fly and drouth. We are gratified, however, to learn from the Michigan Farmer that our friend T. E. Wetmore, of North Cannon, Kent county, Michigan, has succeeded; and that his crop, this season, along side of Soules wheat, our best variety, proves the "Chidham" to be at least "one-third better, both in straw and berry."—ED. JOUR. N. Y. STATE AG. SOC.

CHIDHAM WHEAT.—I herewith enclose a medium sized head of this variety of wheat. It was introduced by the Secretary of the New York State Agricultural Society, from England, soon after the World's Exhibition at London. In England it was considered one of the best varieties of wheat, and drew many prizes. It is a choice white wheat, free from beards—stouter in its growth than the flint wheat, with longer heads, and is equally as hard to shell out, and thus far proves hardy against rust. It is, particularly on land liable to heave, more apt to winter kill by frosts than some of our well established varieties. But it improves in this respect each year. On land not liable to heave it is well worthy a trial.

My crop last season amounted to seven bushels, which I divided with two neighbors, not having any convenient place to sow it myself. It was sown under not very favorable circumstances, about the 20th Sept., along side of Soules wheat. The result of the harvest proves the Chidham to be at least one-third better, both in straw and berry. It was less affected by the fly than the Soules. If any of your readers wish to try it in a small way, I will cheerfully send a sample to all applicants who will enclose a stamp or two to cover return postage. An extra stamp to be retained for the trouble would be acceptable though not demanded.

T. E. WETMORE, North Cannon.

To Keep Milk Sweet.

A. BOYD, a correspondent, informs us that he has practised a peculiar method with much success, preserving milk sweet in the pans. It simply consists in placing a piece of new hammered iron, or three twelve penny nails in each tin pan previously, and then pouring the warm milk on them. He believes that electricity has something to do with producing the result.—*Scientific American.*

Credit.

The article "On Fattening Poultry" in our last number should have been credited to the English Gardeners' Chronicle.

Diseases of Horses.

Inflammation of the Tongue (*Glossitis*).—This is generally supposed to arise from injury to the tongue; but cases frequently occur that cannot be traced to this source. We treated a case of this kind occuring in a horse, the property of Mr. Thomas Bancroft. The animal had performed his usual labor, when, on putting him up at night, the tongue was observed to be swollen, and the tip protruding on one side. On careful examination, no lesion nor injury of any kind could be found. Next day, the tongue was enormously swollen, so that the patient was unable to close the nippers; he had also inflammatory sore throat, and considerable fever. The treatment consisted in applying stimulating liniment to the throat; the mouth was kept constantly moist with salt and water, occasionally cramming a handful of salt between the jaws; he subsisted on thin oatmeal gruel, acidulated with cream of tartar, and got well in six days, without any medicine. Another case was treated in the same manner, which ended in abscess under the jaw, and the patient quickly recovered.

At times, inflammatory action runs high, when it will be necessary to give a dose of glauber salts; dose, ten ounces.

Wounds of the Tongue.—It is very fortunate for horses that wounds occurring in this useful appendage to the mouth generally heal very rapidly: all that is necessary is, to let the animal rest, keep him on a sloppy diet, and apply tincture of arnica to the parts.

Lampas.—So long as horse owners believe "lampas" to be a disease, and men can be found to "burn it out," as it is sometimes termed, just so long will the error exist, and the barbarism continue.

Lampas is a term used to signify a state of tumefaction existing in the palate, about that part known as the *bars*, situated in the vicinity of the upper nippers. The tumefaction arises,—

1. From local *emphysema*,—windy swelling,—rendering the palate elastic and augmented.

2. From induration,—abnormal increase in the consistence of the palate,—owing to an accumulation of dense particles of blood, which resist a free circulation of that fluid through the parts.

3. From congestion, either passive or active.

In passive congestion, there is an excess of blood, in consequence either of weakness in the propelling force, or of an obstacle to the exit of blood from the congested membrane: this state gives rise to swelling of the veins in horses' legs also. Active congestion is a determination of blood to the part, in consequence of local irritation, teething, &c. In aged horses we frequently find the bars of the palate in a state of hypertrophy; but as this is only an exaggeration of a natural state, we take no notice of it; in fact, arising in whatever cause it may, (except teething,) lampas does not cause the animal any inconvenience. This opinion, we are aware, will conflict with that of a great many horsemen, who make a practice of searching a horse's mouth whenever he shows the least sign of illness, to see if the "*lampas are down;*" but let it be understood that the bars or ridges of a horse's mouth correspond to the hard palate in man, which every one knows is not very sensitive, and therefore cannot be the cause of ill health, nor prevent the animal from masticating his food. Hence the practice of burning the bars is an unnecessary barbarity, which should never be countenanced. The most that we ever do in cases of lampas is to wash the mouth with a weak solution of alum, or infusion of bayberry bark; but it often happens that subjects with lampas are brought to us for examination, and in a great majority of cases we find them laboring under some derangement of the digestive function, the restoration of which allays the owners' apprehensions about lampas. The reader, if he still considers that "something must be done for lampas," may, possibly, change his opinion on perusing the following from the pen of Mr. Percivall:—

"Lampas is a name given by writers on farriery to a swelling, or unnatural prominence, of some of the lowest ridges or bars of the palate. I should not have thought it worth while to have taken up time with this *supposed* malady, but that it has called forth the infliction of great torture on the animal by way of remedy, and that it has been a cloak for the practice of much imposition on those who have been in the habit of consulting farriers on the diseases of their horses. I allude to the cruelty and barbarity of burning the palates of horses so affected: equally consistent would it be, and were it consistent, more requisite, to cauterize the palates of children who are teething; for the truth is, the palate has no more to do with the existing disease (if disease it can be called) than the tail has. Lampas is neither more nor less than a turgidity of the vessels of the palate, consequent upon that inflammatory condition of the gums which now and then attends the teething process; but notwithstanding this plain and simple truth, the horse continues to be persecuted for it, even by some *professional* men, as well as farriers. The practice is a stigma upon our national character, and a disgrace to the professors of veterinary science.

"Teething in children is now and then a season attended with restlessness and pain, and was one, before surgeons were in the habit of using the gum lancet, of anxiety and danger; but it is not so with horses; they never have any feverish irritation created in the system, though they may have some *tenderness* of the gums and palate, and though some few, in consequence of this tenderness, *cud* their food, or refuse to eat any but what is soft and unirritating. In such a case, if any thing requires to be done, we ought to lance the gums, not the palate; but I do not remember ever to have had to do this but once; and this happened in the case of a horse, then in his fifth year, which had fed so sparingly for the last fortnight, and so rapidly declined in condition in consequence of it, that his owner, a veterinary surgeon, was under no slight apprehensions about his life. He had himself repeatedly examined the horse's mouth, without having discovered any defect or disease; but another veterinary surgeon, to whom he had shown the animal, was of opinion that the averseness or inability manifested in masticating food, and the consequent *cudding* of most of that taken in, arose from a preternatural bluntness of the faces of the grinders: these teeth, therefore, were filed, but no benefit resulted. It was after this that I saw the horse, and must confess that I was just as much at a loss, in my first examination, to offer any thing satisfactory on the case as many others

who were then present; for his teeth and mouth appeared to us all to be perfect and healthy. As I was ruminating, however, after my inspection, on the apparently extraordinary nature of the case, it struck me that I had not seen the tusks. I immediately betook myself to a re-examination, and then discovered two little tumors, red and hard, in the situations of the posterior tusks, which, when pressed, appeared to give the animal insufferable pain. I instantly took a pocket knife, and made crucial incisions through these prominences down to the teeth, from which time the horse recovered his appetite, and was restored."

Tumefaction of the mouth, arising from whatever cause it may, indicates cooling and astringent washes: a weak solution of alum will probably answer every purpose, with which the mouth may be sponged two or three times daily; an infusion of witch-hazel or bayberry bark will answer the same purpose.

A hot, tender, or inflamed mouth, unattended with disease, may be relieved in the same manner.—*Dr. Dadd's Modern Horse Doctor.*

Wintering Bees.

There is almost as much diversity of opinion with respect to wintering bees as in the construction of hives, and about as difficult to reconcile.

DIFFERENT METHODS HAVE BEEN ADOPTED.—One will tell you to keep them warm, another to keep them cold; to keep them in the sun, out of the sun, bury them in the ground, put them in the cellar, the chamber, woodhouse, and other places, and no places at all; that is, to let them remain as they are, without any attention. Here are plans enough to drive the inexperienced into despair. Yet I have no doubt but that bees have been sometimes successfully wintered by all these contradictory methods. That some of these methods are superior to others, needs no argument to illustrate But what method *is best*, is our province to inquire. Let us endeavor to examine the subject without prejudice to bias our judgment.

THE IDEA OF BEES NOT FREEZING HAS LED TO ERRORS IN PRACTICE.—By close observation we shall probably discover that the assertion so often repeated, that bees have never frozen except when without honey, has led to an erroneous practice.

APPEARANCE OF BEES IN COLD WEATHER.—We will first endeavor to examine the condition of a stock left to nature, without any care, and see if it affords any hints for our guidance, when to assist and protect with artificial means.

Warmth being the first requisite, a family of bees at the approach of cold weather crowd together in a globular form, into a compass corresponding to the degree of cold; when at zero it is much less than at thirty above. Those on the outside of this cluster are somewhat stiffened with cold; while those inside are as brisk and lively as in summer. In severe weather every possible space within their circle is occupied; even each cell not containing pollen or honey will hold a bee. Suppose this cluster is sufficiently compact for mutual warmth, with the mercury at 40, and a sudden change brings it down to zero, in a few hours, this body of bees, like most other things, speedily contracts by the cold. The bees on the outside, being already chilled, a portion of them that does not keep up with the shrinking mass, is left exposed at a distance from their fellows, and receive but little benefit of the warmth generated there; they part with their vitality, and are lost.

HOW PART OF THE SWARM IS FROZEN.—A good family will form a ball or circle about eight inches in diameter, generally about equal every way, and must occupy the spaces between four or five combs. As combs must separate them into divisions, the two outer ones are smallest, and most exposed of any; these are often found frozen to death in severe weather. Should evidence be wanting from other sources to show that bees will freeze to death, the above would seem to furnish it. It is said, "that in Poland bees are wintered in a semi-torpid state, in consequence of the extreme cold." We must either doubt the correctness of this relation, or suppose the bee of that country a different insect from ours—a kind of semi-wasp, that will live through the winter, and eat little or nothing. The reader can have no difficulty in deciding which is the most probable, whether *bees are bees* throughout the world, endowed with the same faculties and instincts, or that the facts as they are, are not precisely given, especially when we see what our own apiarians tell us about their never freezing.

Here I might use strong language in contradiction; but as I am aware that such a course is not always the most convincing, I prefer the test of close observation. If bees will freeze, it is important to know it, and in what circumstances.

HOW A SMALL FAMILY MAY ALL FREEZE.—Suppose a quart of bees were put in a box or hive where all the cells were filled and lengthened out with honey; the spaces between the combs would be about one-fourth of an inch—only room for one thickness of bees to spread through. The combs would perhaps be one and a half or two inches thick. All the warmth that could be generated then, would be by one course or layer of bees, an inch and a half apart. Although every bee would have food in abundance without changing its position, the first turn of severe weather would probably destroy the whole. This, it may be said, "is an unnatural situation." I will admit that it is; the case was only supposed for illustration. I know that their winter quarters are among the brood combs, where the hatching of the brood leaves most of the cells empty; and the space between the combs is half an inch; a wise and beautiful arrangement; as ten times the number of bees can pack themselves within a circle of six inches, as can in the other case; and in consequence the same number of bees can secure much more animal heat, and endure the cold much better; but a *small* family, even here, will often be found frozen, as well as starving.

FROST AND ICE SOMETIMES SMOTHER BEES.—Besides freezing, there are other facts to be observed in stocks which stand in the cold. If we examine the interior of a hive containing a medium-sized swarm, on the first severely cold morning, except in the immediate vicinity of the bees, we shall find the combs and sides of the hive covered with a white frost. In the middle of the day, or as soon as the temperature is slightly raised, this begins to melt,—first next to the bees, then at the

sides. A succession of cold nights will prevent the evaporation of this moisture; and this process of freezing and thawing, at the end of a week or two, will form icicles sometimes as large as a man's finger, attached to the combs and the sides of the hive. When the bottom of the hive is close to the floor, it forms a sealing around the edges, perfectly air-tight, and your bees are smothered. I have frequently heard bee-keepers say in these cases, "The storm blew in, and formed ice all around the bottom, and froze my bees to death." Others that have had their bees in a cold room, finding them thus, "could not see how the water and ice could get there any way; were quite sure it was not there when carried in," &c. Probably they never dreamed of its being accounted for philosophically, and to analyze any thing pertaining to bees would be rather small business. But what way can it be accounted for?

Frost and Ice in a Hive Accounted for.—Physiologists tell us "that inumerable pores in the cuticle of the human body are continually throwing off waste or worn out matter; that every exhalation of air carries with it a portion of water from the system, in warm weather unperceived, but will be condensed into particles large enough to be seen in a cold atmosphere." Now, if analogy be allowed here, we will say the bee throws off waste matter and water in the same way. Its food being liquid, nearly all will be exhaled—in moderate weather it will pass off, but in the cold it is condensed—the particles lodge on the combs in form of frost, and accumulate as long as the weather is very severe, a portion melting in the day, and freezing again at night.

The Effect of Ice or Frost on Bees and Comb.—When the bees are not smothered, this water in the hive is the source of other mischief. The combs are quite certain to mould. The water mould or dampness on the honey renders it thin, and unhealthy for the bees, causing dysentery, or the accumulation of fæces that they are unable to retain. When the hive contains a very large family, or a very small one, there will be less frost on the combs,—the animal heat of the first will drive it off; in the latter there will be but little exhaled.

Frost may cause Starvation.—This frost is frequently the cause of medium or small families starving in cold weather, even when there is plenty of honey in the hive. Suppose all the honey in the immediate vicinity of the cluster of bees is exhausted, and the combs in every direction from them are covered with frost; if a bee should leave the mass and venture among them for a supply, its fate would be as certain as starvation. And without timely intervention of warmer weather, they *must* perish!

Other Difficulties.—Should they escape starving, there is another difficulty often attending them in continued cold weather. I said that small families exhaled but little. Let us see if we can explain the effect.

There is not sufficient animal heat generated to exhale the aqueous portion of their food. The philosophy that explains why a man in warm blood and in profuse perspiration would throw off or exhale more moisture than in a quiet state, will illustrate this. The bees in these circumstances must retain the water with the excrementitious part, which soon distends their bodies to the utmost, rendering them unable to endure it long. Their cleanly habits, that ordinarily save the combs from being soiled, is not a sure protection now, and they are compelled to leave the mass very often in the severest weather, to expel this unnatural accumulation of fæces. It is frequently discharged even before leaving the comb, but most of it at the entrance; also some scattered on the front side of the hive, and a short distance from it. In a moderately warm day, more bees will issue from a hive in this condition than from others; it appears that a part of them are unable to discharge their burden—their weight prevents their flying—they get down and are lost. When cold weather is too long continued, they cannot wait for warm days to leave, but continue to come out at any time; and not one of such can then return. The cluster inside the hive is thus reduced in numbers till they are unable to generate heat sufficient to keep from freezing.—*Mysteries of Bee-Keeping Explained.*

Hoof Bound.

The following are the directions of Dr. Dadd for this disease:

"In all cases we must endeavor to give the frog a bearing on the ground; and in order to do this the shoe ought to be removed. A dry, brittle, and contracted hoof may be improved by repeated poulticing with soft soap and rye meal, applied cold. So soon as the hoof softens, let it be dressed, night and morning, with turpentine, linseed oil, and powdered charcoal, equal parts. Yet, after all, a run at grass in a soft pasture, the animal having nothing more than *tips* on his feet, is the best treatment. A very popular notion exists, that cow manure has a wonderful effect on a contracted hoof; but it is the candid opinion of the author, and no doubt the reader will coincide, that filth and dirt of every kind are unfavorable to healthy action. Such remedy, aside from its objection on the score of decency, savors too much of by-gone days, when live eels were sent on an errand down horse's throats to unravel their intestines. If any benefit belongs to such an objectionable application, it is due to the property it possesses of retaining moisture; therefore cold poultices and water are far superior. Clay and moist earth, placed in the stall for the horse to stand on, are far inferior to a stuffing of wet oakum, which can be removed at pleasure. In order to keep it in contact with the sole, we have only to insinuate two strips of wood between the sole and shoe; one running lengthwise and the other crosswise of the foot. It affords considerable pressure to the foot, is cooling and cleanly, and is far superior to the above articles."

Drying Pumpkins and Making Pies.

Cut them and stew them till they are soft and dry; pound and strain them through a cullender; then grease pie pans and spread it on a quarter of an inch thick and dry it; roll it up, and put it away in a tight box or bag, from the insects. Each one of these rolls will make a pie. It is very easy now to make a pie. Put it in sweet milk, and let it soak about two hours; put in an egg, a table-spoonful of sugar, a tea-spoonful of ginger, and one of allspice; and if you are lovers of pumpkin pie, as we are, you will pronounce it good.—*Ohio Farmer.*

Preparing Poultry for Market.

[The following article on this important subject will constitute a chapter in the forthcoming new and improved edition of the "American Poulterers' Companion," by C. N. BEMENT, to be published by HARPER & BROTHERS of New York:]

If you wish to prepare your poultry in the nicest manner for the market, so that it will invariably secure the best price, observe the following rules, viz:

First, fat them well, and allow them to remain in the pens twenty-four hours without food, previous to being killed. Then, when you kill them, instead of wringing their necks, cut their heads off at a single blow with a sharp axe or hatchet, hang them up by their legs and allow them to bleed, and pick them immediately—picking off their wing feathers, as well as the others, while *warm*. Some, however, prefer to run a small penknife into the jugular vein by the side of the neck, just under the jowls. In this case let the heads remain on; pick them as above mentioned; in picking, great care should be taken not to tear the skin; the wings should not be cut off, but picked to the end. If the head should be cut off, the skin of the neck should be neatly tied over the end. Most people like to see the heads of fowls left on—it makes a better show. The heads of ducks and geese should be cut off. No cut should be made in the breast, all the offal should be taken out behind, and the opening should be made as small as possible.

Some persons send them to market with their intestines in. This, to say the least, is a dirty, slovenly practice, doing great injury to the flesh, as it partakes of the flavor of the excrements when suffered long to remain undressed, and is otherwise impaired from the stagnant blood. After removing the intestines, wipe out the blood with a dry cloth, but no water should be used to cleanse them. With a moist cloth take off the blood that may be found upon the carcass, and hang them up in a cool, dry room, until ready to carry to market, or otherwise to be used. Do not remove the gizzard from its place, but if the fowl be very fat, make a larger hole, turn the leaves out, and fasten them with a small skewer. When prepared in this way, your poultry will be much nicer, and entitled to better prices than when butchered and dressed in the ordinary way.

We have often noticed the careless, slovenly manner, and little attention paid to the external appearance of poultry offered for sale in our markets; and we have also noticed the rapid sale and higher price where due regard was paid to have the skin all sound and clean; the breast not mutilated by a long cut, the shrinking skin exposing the drying meat covered with hay-seed or chaff, but well covered all over with fat, of a rich golden yellow. Much of the poultry exposed for sale has been through the process of scalding to facilitate picking; this practice should never be resorted to. It turns the rich yellow of the fat into a tallowy hue, and oftentimes starts the skin, so that it peels off, unless carefully handled.

Much care and attention is required after the poultry is dressed and cool. It should be carefully packed in baskets or boxes, and above all, it should be kept from the frost. A friend, who was very nice in these matters, used to bring his turkies to market in the finest possible order, and always obtained a ready sale and the highest price. His method was to pick them dry, while warm, and dress them in the neatest manner; then take a long, deep, narrow, tight box, with a stick running from end to end of the box, and hanging the turkeys by the leg over the stick, which prevents bruising or disfiguring them in the least.

Too much should not be exposed at a time for sale, nor should they be hauled over too often. Appearance is every thing with poultry, as well as other articles, and has great influence on the purchaser.

"To preserve poultry in winter," said the late Judge BUEL, "about the 15th of November I purchased a quantity of poultry for winter use. The insides were carefully drawn, their place partially filled with charcoal, and the poultry hung in an airy loft. It was used through the winter, till about the first of February, and although some was kept seventy days, it was not the least affected with moist or taint, the charcoal keeping it sweet."—*Rural New Yorker.*

The Wyandot Corn.

I planted a number of grains of this corn on the 23d of May. It exceeds my expectation, as I feared it was a "Multi Caullus" concern, but it is not so.

The germinative production is from two to seven stalks, from nine to fourteen feet high, each stalk having its own separate spur roots, and each stalk yielding from one to three ears, but generally two ears, *from one grain planted;* the ears have from twelve to fourteen rows of a pearly white color, the ear from eight to eleven inches long, and being near the size of the common red cobgourd seed variety, though the grain is not so long or deep. The ears grow on the stalk as on other corn, but not on the top as on suckers of other varieties do.

There is no doubt but it will yield more corn, and more fodder, than any other variety of maize now cultivated, and if sown broad cast would yield much food for stock cattle of any kind.

I don't pretend to say that this, or any other vegetable, will grow in *any* sort of soil, as it is well known that the soil should contain or be composed of several peculiar composing parts of vegetable matter and nutriment; this, with proper culture, will seldom disappoint the farmer.

I received my seed corn from a gentleman, Mr. THOMAS, of Illinois, who obtained it from a Wyandot Indian.

I planted one grain in each hill, four feet apart each way. *The yield is satisfactory.* I paid at the rate of $1 per hundred grains, and will have several thousand grains to dispose of at the same price, or at what others sell, after the first of next month, though much of it is engaged; those who send in their orders for it first will be served first.

I may also say that I will warrant it pure, and not adulterated or mixed in any way with other corn, and that I have no reason to think that it would require more time or longer season to mature than other corn.

Many gentlemen have been to see this corn (now on the stalk) from different parts of the country.

E. CHANDLEE, M. D.

Near Oxford P. O., Chester co., Pa., Oct. 23d, 1855.—*Amer. Republican.*

DECEMBER 1, 1855.

The New Editors.

In our last number it was announced that the editorial department of the Farm Journal would be hereafter under the control of A. M. SPANGLER, since then we have been fortunate in securing the services of DAVID A. WELLS, A. M., who will occupy the position of principal editor, assisted by A. M. SPANGLER, as associate. This addition, we believe, will be found to be of the greatest advantage to the future character of the Journal.

As an author, Mr. WELLS is well known from his connection with the Annual of Scientific Discovery, The Year Book of Agriculture, and several other scientific and popular works. As a chemist and geologist, Mr. W. was a special pupil of Prof. AGASSIZ, was for a time an instructor in the chemical department of the Lawrence Scientific School at Cambridge, afterwards chemist to the State Board of Agriculture, and has received appointments on several of the State geological surveys.

His report on the soils of Ohio, and his contributions to Silliman's Journal, the American Association for the promotion of Science, and other journals, are well known. The series of articles on the cultivation and manufacture of flax, which appeared in the Scientific American last year, and attracted so much attention, were from his pen. They will be resumed and continued in the pages of the Farm Journal.

In addition to the services of Mr. WELLS for the Farm Journal, regular contributions will be made to its columns by a number of the leading agriculturists and scientific men of our country. The names of these contributors we shall endeavor to announce in our next number.

The late Editor to the Readers of the Farm Journal.

With the present number our editorial connnection with the Farm Journal, which has continued for a period of four years, will entirely cease. It will hereafter be conducted by DAVID A. WELLS, A. M., *Member of the Boston Society of Natural History, formerly Chemist to the Ohio State Board of Agriculture, Editor of the Annual of Scientific Discovery, Familiar Science, The Year Book of Agriculture, etc., etc.*, and A. M. SPANGLER, the original editor and proprietor of the Journal, who will be assisted by a large number of contributors and correspondents, who have promised to lend their aid for the future. It is a satisfaction to the retiring editor in taking leave of his position, which has by no means been one free from anxiety and responsibility, that the Farm Journal is now established on a more prosperous financial condition, and embraces a larger list of cash subscribers than ever before. It is also a satisfaction to him to know that it is passing into other hands far more able and experienced than his own, by which its usefulness and intrinsic value to the farming community will be greatly promoted.

The position of editor was assumed by him in the first place with unaffected reluctance and distrust of his own abilities, and only on the persuasion of too partial friends. Every man has some post or other in the world which he is calculated to fill, and which perhaps his duty to society may require him to occupy. The late editor conscientiously believes his forte does not lie in this direction, that from the first he was unequal to the task assigned him, and regrets he has been unable to render the Farm Journal more worthy of the generous patronage it has received. From his knowledge of the abilities of the new editors and other arrangements which have been made, he feels confident that its future will be successful and satisfactory all around, and place it in the position of the leading periodical of its class in the United States.

The few first years of trial and discouragement for the Farm Journal have been passed, its subscription list has continued steadily to increase, its establishment is now fixed and permanent, the scientific as well as practical details of the various branches, both of agriculture and horticulture, will hereafter be under the direction of some of the most experienced pens in the country, and with the first issue of the coming volume, we predict a large increase in the number of subscribers.

We congratulate our readers on the improvements resulting from the change of Publishers, and to them, as well as the new editors, tender our best wishes for their success and happiness. THE EDITOR.

READ!

With the present number closes the fifth volume of the Farm Journal—and in asking our subscribers to renew their patronage for the ensuing year, we are aware that we do it in the face of the fact that much dissatisfaction has been given many of them during the twelve months that are just passed, in consequence of a want of punctuality in the monthly issues, and the non-answering of letters. And although *we* are not *responsible* for any mismanagement or neglect of duty prior to the ninth month, yet we wish our readers distinctly to understand that we are by no means blind to the fact that such defects did exist to a considerable extent, at the time we assumed our present duties; and that it is now, and shall continue to be, our utmost endeavor to prevent the recurrence of them hereafter. Our facilities for publishing the Journal are now so ample, that we are fully prepared to say that nothing less than circumstances absolutely beyond control, shall prevent us from issuing it regularly on the first of every month; and we are led to hope our readers will find that we mean precisely what we say. We shall also introduce into the coming volume several *new* features, of interest to our readers; such as correct and reliable market reports, and accounts of new patents of such inventions as are connected with agriculture and the domestic arts, &c.

THE PUBLISHERS.

On the Value of Different Kinds of Food for Stock.

From what has been stated in the preceding sections, it appears, as the result both of theory and of practice, that different kinds of food are not equally nourishing. This fact is of great importance, not only in the preparation of human food, but also in the rearing and fattening of stock. It has, therefore, been made the subject of *experiment* by many practical agriculturists, with the following general results:

1. If common hay be taken as the standard of comparison, then, to yield the same amount of nourishment as 14 lb. of hay, experiments on feeding made by different persons, and in different countries, say that a weight of the other kinds of food must be given, which is repre-

sented by the number opposite to each in the following table :—

Hay, - -	10	Carrots (white),	45
Clover hay, -	8 to 10	Mangold-wurtzel,	35
Green clover, -	45 " 50	Turnips, -	50
Wheat straw, -	40 " 50	Cabbage, -	20 to 30
Barley straw,	20 " 40	Peas and beans,	3 " 5
Oat straw, -	20 " 40	Wheat, -	5 " 6
Pea straw, -	10 " 15	Barley, -	5 " 6
Potatoes, -	20	Oats, - -	4 " 7
Old potatoes, -	40?	Indian corn, -	5
Carrots (red),	25 " 30	Oil-cake, -	2 " 4

It is found in practice, as the above table shows, that twenty stones of potatoes, or three of oil-cake, will nourish an animal as much as ten stones of hay will, and five stones of oats as much as either. Something, however, will depend upon the quality of the sample of each kind of food used—which we know varies very much, and with numerous circumstances; and something also upon the age and constitution of the animal, and upon the way and form in which the food is administered. The skilful rearer, feeder, and fattener of stock knows also the value of a change of food, or of a mixture of the different kinds of vegetable food he may have at his command.

2. The generally nutritive value of different kinds of food has also been represented *theoretically*, by supposing it to be very nearly in proportion to the quantity of nitrogen, or of gluten, which vegetables contain. Though this cannot be considered as a correct principle, yet as the ordinary kinds of food on which stock is fed contain in general an ample supply of carbon for respiration, with a comparatively small proportion of nitrogen, these theoretical determinations are by no means without their value, and they approach, in many cases, very closely to the practical values above given, as deduced from actual trial. Thus assuming that 10 lb. of hay yield a certain amount of nourishment, then of the other vegetable substances it will be necessary, according to theory, to give the following quantities, in order to produce the same general effect in feeding :—

Hay, - - -	10	Carrots (red),	35
Clover hay, -	8	Cabage, -	30 to 40
Vetch hay, - -	4	Peas and beans,	2 " 3
Wheat straw, -	52	Wheat, - -	5
Barley straw, -	52	Barley, - -	6
Oat straw, - -	55	Oats, - -	5
Pea straw, - -	6	Rye, - -	5
Potatoes, - -	28	Indian corn, -	6
Old potatoes, - -	40	Bran, - -	5
Turnips, - -	40	Oil-cake, -	2
Mangold-wurtzel, -	50		

If the feeder be careful to supply his stock with a mixture or occasional change of food—and especially, where necessary, with a proper proportion of fatty matter—he may very safely regulate, by the numbers in the above tables, the quantity of any one which he ought to substitute for a given weight of any of the others—since the theoretical and practical results do not in general very greatly differ.

3. As has been already stated, however, it is not strictly correct that this or that kind of vegetable is more fitted to sustain animal life, simply because of the large proportion of nitrogen or gluten it contains; but it is wisely provided that, along with this nitrogen, all plants contain a certain proportion of starch or sugar, and of saline and earthy matter—all of which, as we have seen, are required in a mixture which will most easily sustain an animal in a healthy condition; so that the proportion of nitrogen in a substance may be considered as a rough *practical* index of the proportion of the more important saline and earthy ingredients also.

4. It is very doubtful, however, how far this proportion of nitrogen can be regarded as any index of the *fattening* property of vegetable substances. If the fat in the body be produced from the oil in the food, it is certain that the proportion of this oil in vegetable substances is by no means regulated by that of the gluten or other analogous substances containing nitrogen. The stock farmer who wishes to lay on fat only upon his animals, must therefore be regulated by another principle. He must select those kinds of food, such as linseed and oil-cake, in which fatty matters appear to abound, or mix a due proportion of fat or oil with the other kinds of food he employs.

But large quantities of fat accumulate in the bodies of most animals, only when they are in an unnatural, and, perhaps in some measure, an unhealthy condition. In a state of nature there are comparatively few animals upon which large accumulations of fat take place. A certain portion, as we have seen, is necessary to the healthy animal; but it is an interesting fact, that as much as is necessary to supply this, is present in most kinds of vegetable food. In wheaten flour it is associated with the gluten, and may be extracted from it after the starch of the flour has been separated from the gluten by washing with water. In so far, therefore, as this comparatively small necessary quantity of fatty matter is concerned, the proportion of nitrogen may also be taken, without the risk of any serious error, as a practical indication of the ability of the food to supply the natural waste of fat in an animal which is either growing in general size only, or is only to be maintained in its existing condition.

While, therefore, it appears from the study of the principles upon which the feeding of animals depends, that a mixture of various principles is necessary in a nutritive food, it is interesting to find that all kinds of vegetable food which are raised, either by art or by natural growth, are in reality such mixtures of these several substances—more or less adapted to fulfil all the conditions required from a nutritious diet, according to the state of health and growth in which the animal to be fed may happen to be.

An important practical lesson on this subject, therefore, is taught us by the study of the wise provisions of nature. Not only does the milk of the mother contain all the elements of a nutritive food mixed up together—as the egg does also for the unhatched bird—but in rich natural pastures the same mixture uniformly occurs. Hence, in cropping the mixed herbage, the animal introduces into its stomach portions of various plants—some abounding more in starch or sugar, some more in gluten or albumen—some more in fatty matter—while some are naturally richer in saline, others in earthy constituents; and out of these varied materials the digestive organs select a due proportion of each and reject the rest. Wherever a pasture becomes usurped by one or two grasses—either animals cease to thrive upon it, or they

must crop a much larger quantity of food to supply from this one grass the natural waste of *all* the parts of their bodies.

It may indeed be assumed as almost a general principle, that whenever animals are fed on one kind of vegetable only, there is a waste of one or other of the necessary elements of animal food, and that the great lesson on this subject taught us by nature is, that by a *judicious admixture, not only is food economised, but the labor imposed upon the digestive organs is also materiallg diminished.* —*Johnston's Agricultural Chemistry.*

Country Houses.

We copy the following from Smith's Landscape Gardening. They are appended in the form of notes by the editor, L. F. Allen, and contain just observations of a subject of much importance at this time, when country residences are so much in demand. Serious and irreparable mistakes are frequently made in the erection of buildings, where not only correct taste is ignored, but a waste of capital made, for which we have no acquisition either in appearance or conveniences of accommodation:

"The exterior architecture of such a house, as applicable to a dwelling, cannot be good, because there is a want of fitness in its appearance for the purposes for which it is built. To apply architectural proportions and beauty to an object like this, it should be largely extended to embrace an open court, around which its several parts should extend, like a European palace, a thing we have no use for in America as a private country residence. A moderate sized house of forty, fifty, or sixty feet square, as large as is usually required here, with a strictly architectural finish, must look like a public structure, and then it becomes an absurdity as a dwelling. Its interior fitness is no nearer the mark, for its convenience must yield to the demands of the exterior —a showy dwelling altogether.

"In the second light in which the style of the house may be regarded, as the permanent residence of the man of leisure, the scholar, the retired man of business, or of him who resorts to the country for a sojourn of a few months in the year, and unconnected with agricultural pursuits, other considerations move him in its construction than those which control the agaicultural proprietor alone. If he retire at the distance of some miles from the city, and out of the immediate neighborhood of a village, the man who intends building a park residence will appropriate a sufficient area of ground to accommodate his wants in the way of pasturage for his horses, cattle, sheep, and poultry, (for without them his establishment must be incomplete,) and combine within his own possessions a sufficiency of wood—and water, if possible—to give a completeness to the domain within his own apparent boundaries. These accomplished, the house becomes the attractive and paramount object of his attention.

"Although not perhaps exactly within the province of these notes to give a homily on the financial policy of house-building in the country, yet for the edification of such as look to country residence as a recreation, or a temporary retirement only, it may not be inappropriate to suggest some reflections when about to invest a portion of their capital in an object so fruitful of pleasurable anticipations. There is probably no description of real estate which is so fitful in its occupation, and so temporary in the tenure, as the country places belonging to residents in our cities. The reasons leading to this might be given at length, but they will readily occur to any one who chooses to give the subject a deliberate thought. Some people buy a place and retire into the country without the knowledge of what country life really is—without any true appreciation of its pleasures or its sacrifices—without reflection upon its inconveniences or its expense. They adopt it, in short, because it is the fashion. One buys a piece of ground without knowing its capabilities for the object to which it is designed, and throws himself into the hands of his professional landscape undertaker, and his architect, heedless of their skill or fitness to execute their work. They squander his money, and put up a place—after the fashion—and perhaps before it is ready for his occupation, he becomes disgusted with the expense and place together, gets over his passion for retirement, and sells it on the first good offer, at a heavy sacrifice. Another may retain his, and try country life for a year or two, and then, finding it unsatisfactory, disposes of it at perhaps a better price than the last, and pockets the loss with the best grace he can. Another, still wiser, buys a place already built, at a considerable discount, and occupies it, intending to make it a permanent residence; but his circumstances changing, in business or family, it is again sold, most usually at a loss, for, coming into his hands ever so complete, his own propensity for improvement has involved an outlay of some thousands for its further embellishment, for which the new purchaser is not inclined to pay. And so goes almost the entire chapter, until there is rarely to be found a "country place" within striking distance of our principal cities, which has been occupied for twenty years by the same family, or name, and but very few for half that period. They have proved the most expensive luxuries in which their proprietors have indulged, and are thrown off their hands like any other bauble which amused their fancy for the time, and with quite as little regret.

"These are facts which it is well to weigh before involving one's self in a large expenditure in building a country residence. An investment in land is not so hazardous a matter. If well situated and well purchased, the loss in it cannot be much when one wishes to dispose of it, even if not valuable for agricultural purposes. It is usually the house and the other erections built upon it which sink the capital, and in the event of the sale of the premises, tastes in such property usually differing, the purchaser is fastidious unless he can drive a decided bargain. Many familiar places can be named which half ruined the owners in building them, and never gave them a moment's enjoyment in their occupation. The splendor of his dwelling can add nothing to the consequence of the proprietor in the community in which he lives, further than to identify him with the notoriety of his temporary castle; and to the man of true fame, an ambitious and costly house counts but little with those whose approbation he is most solicitous to preserve.

"We would not be misunderstood as suggesting a mean and parsimonious spirit in the country dwelling. Far from it. Every thing relating to it should be on a

liberal plan—large enough, rooms enough for family and relatives, and complete in every luxury and comfort; but all for use, and not for show. Ostentation should have no abiding place in the country. Health, leisure, amusement, quiet, rural beauty, are the objects for which the country is sought by the jaded citizen, or the lover of country life. These attained, the purposes of the park and its country house are accomplished; and what these cannot provide within the limits of a reasonable expenditure in a dwelling, no amount of money can bestow. On the contrary, an opposite course—the squandering of a large sum on an object which in its nature and purpose is designed as a retreat from the throng and bustle of the town, has often defeated the very design intended, and driven many an honest seeker of the true pleasures of rural life again into the labor and turmoil of business, from the mistakes they had made in the outset."

What Draining Did.---A Short Chapter for Hired Men and their Employers.

Some years ago the son of an English farmer came to the United States, and let himself as a farm laborer, in New York State, on the following conditions: Commencing work at the first of September, he was to work ten hours a day for three years, and to receive in payment a deed of a field containing twelve acres—securing himself by an agreement, by which his employer was put under bonds of $2,000 to fulfil his part of the contract; also, during these three years, he was to have control of the field; to work it at his own expense, and to give his employer one-half the proceeds. The field lay under the south side of a hill, was of dark heavy clay resting on a bluish-colored solid clay subsoil, and for many years previous had not been known to yield any thing but a yellowish, hard, scrunted vegetation.

The farmer thought the young man was a simpleton, and that he, himself, was most wise and fortunate; but the former, nothing daunted by this opinion, which he was not unconscious that the latter entertained of him, immediately hired a set of laborers, and set them to work in the field trenching as earnestly as it was well possible for men to labor. In the morning and evening, before and after having worked his ten hours as per agreement, he worked with them, and continued to work in this way until, about the middle of the following November, he had finished the laying of nearly 5,000 yards of good tile underdrains. He then had the field plowed deep and thoroughly, and the earth thrown up as much as possible into ridges, and thus let it remain during the winter. Next spring he had the field again plowed as deep as before, then cross plowed and thoroughly pulverized with a heavy harrow, then sowed it with oats and clover. The yield was excellent—nothing to be compared to it had ever before been seen upon that field. Next year it gave two crops of clover, of a rich dark green, and enormously heavy and luxuriant; and the year following, after being manured at an expense of some $7 an acre, nine acres of the field yielded 936 bushels of corn, and 25 wagon loads of pumpkins; while from the remaining three acres were taken 100 bushels of potatoes—the return of this crop being upwards of $1,200. The time had now come for the field to fall into the young man's possession, and the farmer unhesitatingly offered him $1,500 to relinquish his title to it; and when this was as unhesitatingly refused, he offered $2,000, which was accepted.

The young man's account stood thus:

Half proceeds of oats and straw, first year,		$165 00
Half value of sheep pasturage, first year,		25 00
Half of first crops of clover, first year,		112 50
Half of second crops of clover, including seed, second year,		135 00
Half of sheep pasturage, second year,		15 00
Half of crops of corn, pumpkins and potatoes, third year,		600 00
Received from farmer for relinquishment of title,		2,000 00
Account Dr.		$3,152 50
To underdraining, labor and tiles,	$325 00	
To labor and manure, 3 seasons,	475 00	
To labor given to farmer, $16 per month, 36 months,	576 00	—1,377 00
Balance in his favor,		$1,776 50

Our farmers must learn that knowledge and enterprise and perseverance exercised in their business, will not only add a hundred fold to their own income, but will also confer more permanent benefits upon our country than these qualities exercised in the same degree in any other business whatever.—W. D., *in N. Y. Times.*

Exhibition of the United States Agricultural Society at Boston.

In the Boston Journal Extra, we find full reports of the above exhibition, which commenced as advertised on the 23d of October and continued five days. It appears to have been the most successful of any similar exhibition yet held in this country. Sixty thousand persons were estimated to be on the ground at one time. There was a cavalcade of five hundred and seventeen cart horses in a single line, besides some of the best turf and road horses in the country. The neat cattle, sheep and swine embraced all the different breeds, and were from the herds of several of our most eminent stock raisers. Never before in the United States has there been brought together the same number and quality of fine animals. The arrangements of every kind were fully up to the occasion. No accidents, no want of room, no clashing of opinion or hesitancy as to where or how contributors were to dispose of their contributions, but *every thing* seemed planed beforehand, and in the very best manner. Too much credit cannot be given to the able President of the Society, M. P. WILDER, and to his experienced assistants, for the triumphant manner in which they put the whole affair through. The *banquet* was, as it is always made to be on such occasions in New England, a prominent feature. It took place under an immense tent, the table being spread for two thousand people, and a large number unable to gain admittance. Behind the chair of the President, the stars and stripes were gracefully gathered in folds, and above, spread out in all their amplitude, the flags of England, France, Belgium, Turkey, and other countries. Some of the most distinguished statesmen and orators of the country were present and delivered addresses, several of which were so far beyond

and superior to the ordinary efforts of public orators, that we are tempted to transfer two of them to our pages, those of EDWARD EVERETT, of Boston, and MORTON MCMICHAEL, of Philadelphia, which our readers will doubtless think with us deserve preservation.

The receipts of the society from all sources during the exhibition was between thirty-two and thirty-five thousand dollars, and the numbers in attendance were estimated from one hundred and fifty to one hundred and seventy-five thousand people. From careful estimates made by the Chief of Police, the number of persons visiting Boston on Thursday, the 25th, in vehicles, on foot, and by railway, was 87,716, and the number who went out on the same day was 82,106, showing that 5,610 strangers stayed over night.

The number of horses exhibited was about three hundred, embracing the various classes of stallions and breeding mares, adapted for the turf, road, draft, &c., and some fifteen or more as ponies. A trial of speed was held of all such horses as had never trotted for money, exhibitors to drive, and to be persons who had never driven for money; first premium $200, second $100. Twenty horses appeared as contestants.

The premiums for horses ranged from $200 down to $25; for cattle, from $100, the highest premium, down to $10. Messrs. MORRIS & BECAR took three $100 premiums for their Durhams, besides several first premiums of $50 for younger animals. Their Durham bull "Romeo," over three years old, was the fortunate recipient of the first premium; the Durham cow "Iris" the first premium for the best cow over three years. Of Devons, the highest premium of $100 was awarded to the bull "Winchester," owned by J. N. DE FORREST, Dove, New York; for the best Devon cow over three years, $100 to E. G. TAILES, West Farms, New York. For the best Ayrshire bull over three years to "Kelbum," owned by HUNGERFORD, BRODIE & CONVERSE, Ellisburg, New York; for the best Ayrshire cow to the same gentleman, $100 for "Mary Grey." For the best Hereford bull, the premium of $100 was awarded to DAVID GODDELL, Brattleboro', Vt.; for the best Hereford cow to "Milton," of Slate Farm, Westboro', Mass. THOMAS MOTLEY, of Mass., received the first premium of $100 for the best Jersey bull, and G. H. FRENCH, of Andover, Mass., for the best Jersey cow "Rose." The $100 premium for the best milch cow, five years old and upwards, was awarded to W. W. WATSON, Princeton, Mass. The breed of this cow and her yield of milk and butter is not stated, nor how the committee arrived at their award. Of sheep, there appears to have been a large display of all the different breeds—long wool, middle wool, French and Silesian Merinoes, mixed breed of Spanish and Silesian, also fine Saxony. Messrs. MORRIS and HAIGHT were the successful competitors for middle wool, CAMPBELL and SANFORD for Saxony, HUNGERFORD, BRODIE & CONVERSE, of Ellisburg, New York, and D. B. HAIGHT, for long wool, and CHAMBERLAIN & CAMPBELL, of Red Hook, New York, for French Merinos. Suffolk, Essex, Berkshire, and other breeds of swine were exhibited, $25 being awarded as the highest premiums.

Want of space prevents us from going more into detail of this most successful exhibition. May we not hope that Philadelphia will be selected as the place for the United States Society to hold its fourth display. Its intermediate position between the North and South would probably attract from various sections of the Union a representation of visitors not to be obtained elsewhere.

A Man of Science Gone.

Professor JOHNSTON, the author of "*Chemistry of Common Life*," and well known in the scientific world for his professional ability, died recently, in Durham, England, in his 59th year.

Three years since Prof. J. was in the United States, and delivered the Annual Address before the New York State Agricultural Society, at Syracuse. He was the author of a number of excellent works on Agricultural Chemistry, and was distinguished for his profound knowledge of agricultural science. He was highly respected in our country, both for his scientific acquirements and his manly virtues. All his works have been republished in this city; this shows the estimation in which he was held, and the practical character of his writings.—*Scientific American.*

Potatoes.

We were shown yesterday by a gentleman of this village a potatoe vine, through the whole length of which a worm had bored his way, commencing at the bottom and eating out at the top. He had also another in which the worm was still at work; it was about an inch in length, and thoroughly cleansed the inside of the stalk—leaving its young, many of which could be seen, to multiply by the hundred. The vines in one particular spot only were found infested in this manner, but there is no doubt but that the plague would rapidly spread unless exterminated at once. Would it not be well for our farmers to examine potatoe tips occasionally, as the rot will probably destroy the potatoe if the top is killed thus early.

In some parts of the State, we learn that the rank growth of the crop has developed itself chiefly in the vines, which are luxuriant beyond precedent, while the essential root itself, the potatoe, is found, upon being pulled, to amount to next to nothing, being very small and poor.—*Litchfield (Conn.) Enquirer.*

Adulterated Food in England.

At the late meeting of the British Association, Dr. PEARSON, in the chemical section, asserted that there were only two articles manufactured for food which were not adulterated, common salt and refined lump sugar. He challenged any gentleman present to add another article to the list.—*Scientific American.*

☞ A Bedouin Arab Stallion has just arrived at Philadelphia, of the celebrated Kylan breed in Eastern Arabia. He is a grey, four years old. We understand $10,000 has been refused for him; his owner requires $12,500. The horse was 166 days on shipboard, during which he never laid down. He is said to be in fine health.

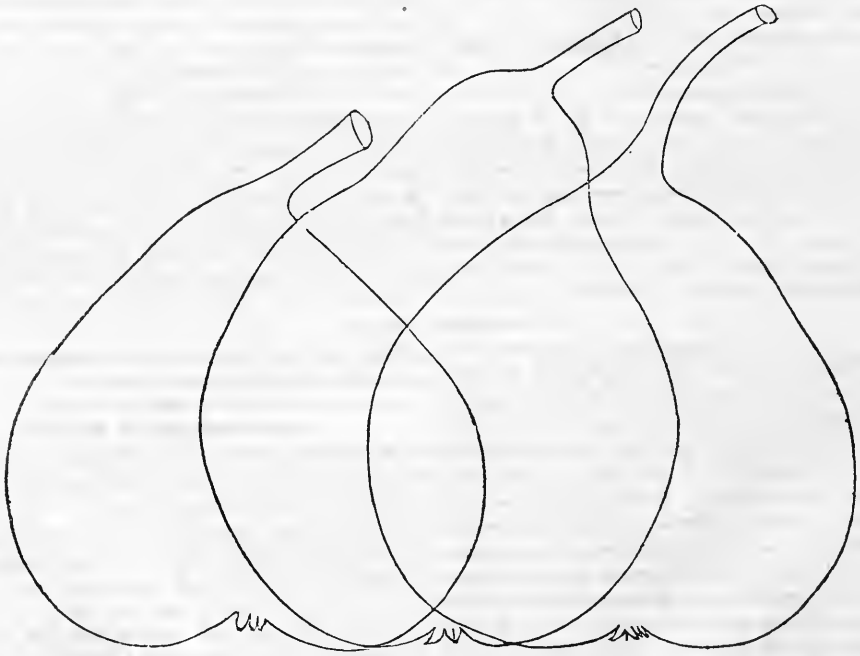
☞ It is said that ALVAH HURLBUT, of Ulysses, Tompkins county, New York, has a single stalk of buckwheat that produced 6618 full and perfect grains. The weight of this enormous yield was five and a half ounces.

Fall Treatment of Trees.

MR. FREAS:—Many who attempt the cultivation of fruit and ornamental trees, fail from not paying sufficient attention to them in the fall. The fall of the leaf is often a critical time with most trees, and they consequently require more attention than at other times. Trees that have been recently set, and which have not had time to radicate, or send out vigorous laterals for their support, generally receive considerable injury from the autumn winds, the swaying to which they are exposed, causing a laceration of the radicals which not unfrequently operates fatally, and is always to a greater or less extent injurious even where the effect is not clearly apparent. All trees should be secured from this evil by stakes fixed in the soil, as soon as they are set out. This precaution will often be the means of saving much expense, and the loss of many valuable trees. In the spring, as soon as the frost is fairly out of the soil, the sward should be removed, and manure dug in around the roots. Compost, formed of forest scrapings, stable manure, chip manure, wood ashes, old lime and gypsum, constitutes a most excellent stimulant for young trees. In setting apple trees, I have found that a few quarts of lime, deposited in the holes before the trees are placed in position, causes a rapid and vigorous start, and secures a healthy development through the subsequent periods of growth. After filling in, which should be done with great care, I generally, in the case of young trees, cover the surface with spent tan, fine chips, saw-dust, or straw. A good *mulching* article for plum trees, is found in salt hay, the invigorating and sanatory effects of which, upon most species of the plum, which is of marine origin, is remarkable. When it cannot be easily obtained, ordinary fresh hay, wet with a solution of salt, may be used as a substitute. But of all articles used, chip manure, when fine, is probably the most valuable; it lasts for a long period, acts as an efficient non-conductor, keeping the soil moist and warm, and prevents the growth of weeds. As it decomposes, it supplies a healthful and invigorating pabulum to the roots, and restores to the soil a portion of the alimentary matters abstracted by the trees. Ornamental trees are rarely transplanted as they should be. The work is generally performed by men who have no interest in the labor, and who, feeling themselves perfectly irresponsible, are of course indifferent as to the result. No work better repays extra care than that of tree planting, whether pursued on a small or large scale. —S. P. B.—*Germantown Telegraph.*

NEW PEARS THAT PROMISE WELL.

We insert the accompanying cuts of five fine Pears which have been introduced into this country to the attention of Pomologists, chiefly through the Hon. M. P. Wilder, to whom the public are largely indebted for some of our finest fruits. Four of them, Dogenne, Goubault, Charles Van Horgten, Beune Superfine, and have been passed upon by the last American Pomological Convention, in Boston, as "varieties that promise well." The descriptions are by M. P. Wilder.



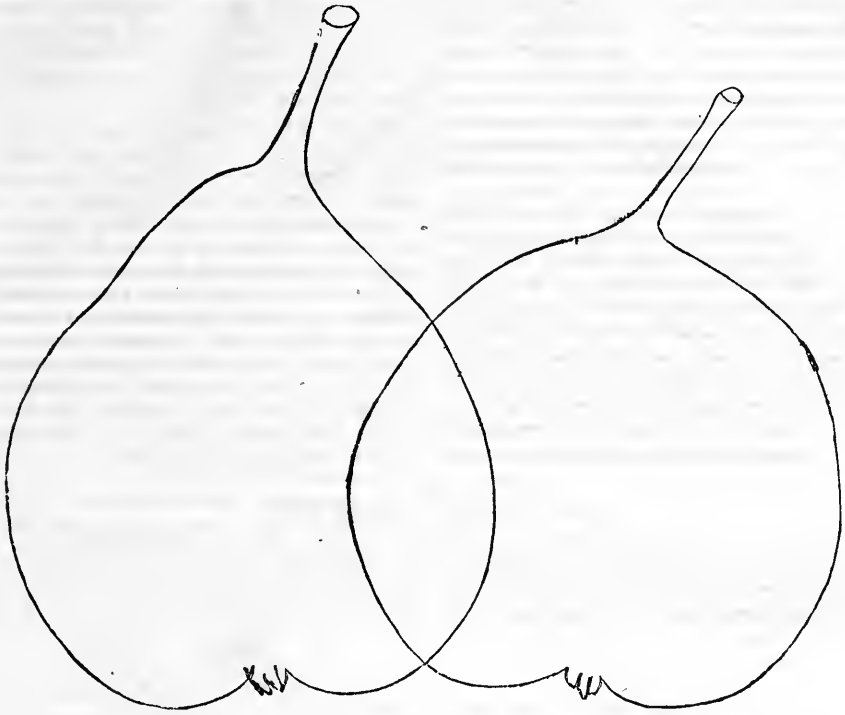
DOYENNE GOUBAULT. FONDANTE DES CHARNEUSE. CHARLES VAN HOOGTEN.

FONDANTE DE CHARNEUSE.—Size—large. Form—obtuse pyriform, surface and outline irregular; neck, short and thick. Stem—short, thick, and inserted without depression. Calyx—small, moderately sunk in a narrow ribbed basin. Skin—dull yellowish green, coarsely dotted and clouded with patches of russet. Season—October to November. Class—"*very good.*" Flesh—melting and juicy, with a rich sacharine perfumed flavor, and sometimes a little astringent.

CHARLES VAN HOOGTEN.—Form, obovate, acute pyriform. Size—above medium. Skin—dull pale yellow, thick. Stem—stout, set without depression, enlarged at the base. Calyx open, in broad and flattish basin; segments, short, frequently abortive. Flesh—yellowish, white, melting, buttery and juicy. Flavor—sacharine, rich, with pleasant aroma. Season—October 1st to 15th. Class—"*very good*"

DOYENNE GOUBAULT.—Size—medium, occasionally large. Form—obovate, acute pyriform. Stem—short and thick. Calyx—small, deeply sunk. Color—dull pale yellow, with a

few traces of russett, particularly at the stem and calyx. Flesh—melting and juicy. Flavor—rich, sweet, aromatic. Season—December to February. Class—"*very good.*"—Keeps well, and promises to be a very fine winter variety. Succeeds better on the pear than on the quince, and adheres well during the autumn gales.



BEURRE SUPERFIN. BERGAMOTTE D' ESPERIN.

BEURRE SUPERFIN.—Size—medium to large. Form—obovate, acute pyriform. Calyx—closed, small, deeply sunk. Stem—rather short and stout, fleshy at the base, set without depression. Color—yellowish green, somewhat russetted, and occasionally with brownish red cheek. Flesh—very melting and juicy, with a rich, agreeable, sub-acid flavor. Season—middle of October to 1st November. Class—"*very good.*" Promises to be a valuable acquisition.

BERGAMOTTE D'ESPEREN.—Size—medium. Form—roundish. Calyx—closed, sunk in a moderately deep, coarsely furrowed basin. Color—dull green, coarsely dotted, with some russet patches, and occasionally with brownish red cheek. Flesh—fine grained, buttery, melting, and juicy. Flavor—very sweet and rich. Excellent. Season—December to February. Class—"*very good*"—may prove "*best.*" Very productive. Bears in clusters.

Discussion at the N. York State Fair.

Comparative Value of Guano and Barn-yard Manure, Salt, &c.

During the late State Fair at Elmira, some little excitement was caused by Solon Robinson, of the New York Tribune, asserting that on Wednesday evening he would prove that *no farmer could afford to draw manure a mile, even could he obtain it for nothing.* At the appointed hour the room was filled, and the speaker essayed to fulfil his promise.

On a prairie soil, he said, it would not pay to draw manure *any* distance, because the soil contains too much humus. He had himself preferred to move the barn instead of the manure. But he did not refer to these soils. He would instance the poorest soils of Long Island, or the sandy hills of Albany, where farmers were in the habit of taking their straw to New York, selling it for a trifle over the cost of drawing, and taking back a load of *colored* straw called manure. It was on these poor soils that farmers could not afford to draw manure one mile. But he should be asked, "What will you do with the manure?—throw it away?" Not at all. Apply it to the land near the house, and on the more distant fields use some concentrated fertilizer, in the fore ranks of which he placed Peruvian guano. He had seen 200 lbs. of Peruvian guano per acre, increase the wheat crop from four to seventeen bushels per acre. Could any such results be obtained from barn-yard manure? Could any farmer afford to draw it a mile when he could get Peruvian guano at the present price? Then there was salt. "Salt is worth more as a manure than it sells for for other purposes. Farmers can make money by going to Syracuse and purchasing salt at market prices and sowing it on their land." One farmer had told him to-day, that he hauled wet leached ashes sixteen miles, and he considered the benefit sufficient to pay the expense. He, Mr. R., asked him why he hauled ashes so far. He replied, "for the good they do the land." Mr. R. supposed the benefit was from the potash they contained. Now, could not the potash be obtained in a more concentrated form? Boats are now being loaded at Rochester, with leached ashes for the use of Long Island farmers. The potash they contained could be obtained in the market at a much cheaper rate. The time is coming when the farmer will know what to put on his land to produce wheat or any other crop, as certainly as the housewife knows what to put into the trough to make bread. It is just as easy for him to know.

Sanford Howard, of the Boston Cultivator, thought the benefit derived from leached ashes was not from the potash

they contained alone. He did not know what gave leached ashes their peculiar value. No matter if we do not, so long as experience proves their value. We know, however, that they contain some phosphates; and it is probable that *old* leached ashes, that have been exposed to the atmosphere, contain nitrogen, and would be valuable on that account. He had seen guano used without any visible effect. He mentioned several instances where salt had been applied to land without any benefit. One gentleman who had manufactured salt, and had tried it on his land repeatedly, informed him that he found the less he got on his soil the better.

L. Wetherell stated that a farmer in Hampshire county, Mass., informed him that "no farmer could afford to move his manure at all, as long as he could obtain guano at present prices. Another farmer told him, that on poor land where he could obtain nothing—not even "poverty grass," by the use of 300 lbs. of guano per acre he succeeded in raising 30 bushels of wheat. Another gentleman had used guano as a top-dressing on grass, and obtained good results, but ever afterwards nothing would grow on the land.

Hon. Geo. Geddes, of Syracuse, had long time ago given up the idea that agriculture is an exact science. He had tried salt to his satisfaction. He had staked out a rod of land in each of three different fields, and carefully dressed them with salt, and sowed them with barley, oats and wheat; and he could never see the difference between them and where no salt was applied. The President of the Onondaga County Society called on him to visit a field of wheat, where salt had been applied on a portion of it, and where, he said, the exact line of demarkation could be distinctly perceived; but his (Mr. Geddes',) eyes were not sharp enough to distinguish it.

Hugh T. Brooks, of Wyoming, thought a good deal of barn-yard manure. When we speak of barn-yard manure, we use an indefinite term. It may mean something of great value, or a comparatively worthless compound. He put a good dressing of manure on his corn fields, and the census man stated that it was the best corn he had seen. He, Mr. B., thought that farmers should husband their manures, and return all animal and vegetable refuse to the earth from whence it came.

Sanford Howard said there was a gentleman present who had had much experience in the use of guano and other concentrated fertilizers, and who had been for some years connected with an extensive series of experiments in England, and he would like to hear his opinion in regard to the subjects under discussion. He referred to Joseph Harris, of the Country Gentleman.

Mr. Harris agreed with Mr. Robinson that Peruvian guano was the cheapest and the best concentrated fertilizer at present in the market, for wheat, corn, and other cereals. Mr. R. had not attempted to prove that "no farmer could afford to draw manure one mile." He had simply endeavored to show that Peruvian guano, salt, &c., were cheaper sources of fertilizing matter than barn-yard manure. The question to be decided was the relative value of Peruvian guano and barn-yard manure. Chemical analysis afforded much light on the point. Peruvian guano contained all the elements of barn-yard manure. The difference between them is mainly in the relative proportion of these elements. Barn-yard manure contained an immense amount of carbonaceous matter, silica, &c., while Peruvian guano contained very little. But these substances were of little manurial value. The most valuable ingredient in Peruvian guano was ammonia, and we may take the quantity of this substance as indicating the relative value of the two manures. Certainly this method would not underrate the ultimate value of barn-yard manure. Good Peruvian guano contains twenty-five times as much amonia or nitrogen as good barn-yard manure. According to this method of estimating their relative manurial value, one ton of Peruvian guano was equal to 25 tons of barn-yard manure. If Peruvian guano sells for $50 per ton, barn-yard manure is worth $2 per ton. He would have farmers to decide whether they could afford to draw it one mile for this, or not.

In reply to various questions asked by several gentlemen present, Mr. H. said he had seen salt used as a manure in many instances, and never once with any marked beneficial effect. Nevertheless there were many well authenticated experiments where it has produced a considerable increase of the crop. It gave strength and brightness to the straw. Prof. Way has suggested that salt acts beneficially on some soils, by increasing the solubility of the double silicate of alumina and ammonia, in which form he thinks it not improbable that the silica so largely existing in the straw of wheat, and which enables it to stand erect, is taken up by the plant. We have no existing system of rotation, by which sodium and chlorine,—the elements of salt,—could be removed from the soil, without, at the same time, removing other elements of plants in greater proportion. Salt, therefore, cannot be used, to any great extent, as a manure. It can never be a manure equal to phosphoric acid or ammonia, inasmuch as a small quantity only is removed from the soil, as compared with these and other substances. He, Mr. H., was greatly in favor of Peruvian guano, yet its value might be over estimated. In England, 3 cwt. of good Peruvian guano gives an increase in the wheat crop of 10 bushels per acre. At present prices this would cost $10, and it follows that if wheat sells for $1 per bushel, little is gained by its use; but if it sells for $2, the application of guano will be quite profitable. Those who are continually holding up to our imitation the high farming of England, appear to forget that English farmers obtain a higher price for their produce. He believed, that for the production of wheat, this climate was superior to that of England, and that if he could obtain English prices;—if he could obtain $3 per bushel for wheat, he could annually raise 50 bushels per acre.

Gen. Harmon, of Wheatland, thought this could not be done, and offered to pay the gentleman $3 per bushel for all the wheat he could raise in crops of 50 bushels per acre.

Mr. Harris believed that this climate would enable him to raise such crops if a sufficiency of mineral and ammoniacal manures were supplied; but had he anticipated Gen. Harmon's proposition he would have said 40 bushels in order to be within safe bounds. Last year, Mr. Lawes, of Rothamsted, England, produced 55 bushels of wheat per acre on land that had grown 12 crops of wheat in 12 successive years. This result was due in a great measure to the dryness of the season. Had the same amount of fertilizing matter been supplied in a wet year the crop would have been all straw. A dry, hot season is what good English wheat growers desire. The nearer their summer approximates to ours in rain and temperature, the better their wheat crops.

An animated discussion followed on the value of salt as manure. Judge Cheever said he applied a quart of salt to his plum trees and it killed every one of them. L. Wetherell thought salt was good for plum trees, and he had been informed that it would cure the black knot.

This was emphatically denied by many gentlemen present. Salt had been repeatedly used for the black knot, and proved of no use.

Mr. Osborn, of Watervliet, had used salt on his orchard with the best result. It had an astonishing effect.

Mr. Harris asked how Mr. Osborn knew that the salt

was beneficial,—was a portion of the orchard left without any salt?

Mr. Osborn replied that the *whole orchard was dressed with salt*, but he knew that the salt had a good effect because the trees grew better the year after it was applied than they did the year preceding.

James Vick, of the Genesee Farmer, made a few humorous remarks on the subjects under discussion, alluding to the discrepancy between the statement of Solon Robinson that 200 lbs. of guano would give an increase of 13 bushels of wheat per acre, and that of Joseph Harris, that 336 lbs. were required in England to produce an increase of 10 bushels over the unguanoed portion of the field.

Mr. Harris said that if guano was found to produce so great an effect as that ascribed to it by Mr. Robinson, he quite agreed with him that it would be more profitable to buy guano than to draw manure one mile, even if it could be had for nothing. He believed, however, that *as a general rule*, no such results would be obtained.—*Boston Cultivator.*

U. S. Agricultural Society.

We copy from the North American the following proceedings of the U. S. Agricultural Society recently held at Boston.

"At the Grand Banquet which formed one of the most interesting features of the recent display at Boston, the delegates from Philadelphia were treated with especial distinction. Seats were provided for them, and the ladies of their families who accompanied them, in the most desirable and commanding position; and their presence was most flatteringly acknowledged by the President, the Hon. M. P. Wilder, among the earliest recognitions of the day. Among the gentlemen who were present representing our time-honored society were the President, David Landreth, Gen. Patterson, Dr. Elwyn, Dr. A. L. Kennedy, Algernon S. Roberts, Maj. P. R. Freas, Owen Jones, John McGowan, Wm. G. Warder, Isaac Newton, Morton McMichael and others.

As we learn from the Boston papers, after toasts had been proposed to the States of Massachusetts and Rhode Island, which had been respectively answered by the Governors of those Commonwealths, and to the city of Boston, to which the Mayor replied:

President Wilder said, the gratifications of the occasion were heightened by the presence of representatives from the two oldest agricultural societies in the Union, those of Philadelphia and Massachusetts. From the former he was particularly pleased to welcome a delegation comprising a number of eminent citizens of Philadelphia, who had favored the National Society by sharing in its labors, and now honored it by uniting in its festivities. With the double view of expressing to these gentlemen the sense he entertained of the merits of their Society, and of drawing from them something in reply, he would propose,

The Philadelphia Society for the Promotion of Agriculture—The oldest American organization for the advancement of this worthy cause—the parent of all similar institutions in our country; her children and her children's children rise up and call her blessed.

Mr. Landreth, President of the Society complimented said—

Mr. President,—I hope you will not smile at my simplicity, when I candidly say that although I expected to say something, I have nothing to say. Perhaps when you were a schoolboy, you may have read in an old book, now somewhat obsolete, I fear, a story of certain young women—I think there were five of them—who upon a festive occasion were found in a peculiar condition, I mean sir, that they had no oil in their lamps. I, unhappily, am in a similar state, or even worse, surrounded as I am by the sparkling eyes of the ladies, which serve to render the darkness more apparent. It was Addison, I believe, who authorized another to draw upon him for a thousand pounds, when he had only sixpence in his pocket. I, sir, upon this occasion, am in a still worse condition, for I am found without a penny. Under such circumstances, what is to be done? In the language of the Irish Ambassador, situated as I am, indeed, I may say, circumstanced as I am, I hope you will allow me to call upon one better suited for the occasion, and, with your permission, I will name Mr. McMichael, the distinguished editor of the Philadelphia North American.

Mr. Wilder then introduced Mr. McMichael, who said:

From the land of the Quaker to the land of the Puritan—from the city where our national independence was first proclaimed to the city where its first great labor was perfected—we, who have just been honored by the toast you have proposed, have come, not as once we might have come, in awe of stripes, and brandings, and imprisonment; nor, as again we might have come, burdened with the weight of a gloomy foreboding, to share in the perils of a doubtful conflict. No, sir. Happier in this than our forefathers, whether of the earlier or later time, we have come, assured of hospitable welcome and bounteous entertainment, to witness the generous rivalries of friendly contestants, and to mingle in the rejoicings which properly belong to the triumphs of peace. And, sir, we feel that it is good for us to be here—we feel now that the bitterness of intolerance as between you and us has forever ceased, now that the privations and dangers of revolutionary struggles for you and for us are forever over, recalling, as we may, with a smile, the follies of the fanaticism by which we were separated, remembering, as we must with a sigh, the trials of the patriotism by which we were united—we feel that it is good for us, men of Pennsylvania, to be here with you, men of Massachusetts; to engage with you in a common effort to promote an important interest of our common country; to admire with you the rapid development of that interest; to exult with you over the unexampled prosperity of that country. Missionaries from our heaped up granaries, from our prolific mines, from our teeming furnaces, we have entered your industrial establishments—those vast reservoirs of life, and of motion in its seeming intelligence resembling life—and having seen with our own eyes and measured with our own judgments the men and the processes that, by consuming our corn, and our coal, and our iron, and replacing them with the fabrics that supply the staples of a busy commerce, have made our interests and yours complete and identical, we are ready to cry "Woe, woe, woe," unto him that would dissever us. Sir: bound together as we are, it was not possible we could meet as strangers, but you have received us as favored brethren; and in behalf of my colleagues, and in the name of those we represent, I cordially thank you; I thank you for the courtesy which has been extended to us; I thank you for the privilege we have enjoyed of being partakers at the same time of your pleasing duties and your grateful cheer; I thank you for the opportunity you have furnished us of joining our hands, and our hearts, and our voices with yours, in the fulfilment of mutual services, in the recognition of mutual kindness, in the utterance of sentiments of mutual good will.

Mr. President: As I looked yesterday on the gratifying exhibition made among the triple hills of your beautiful Boston, like his excellency, the Governor, I too was reminded of those ancient days when from all the isles of Greece, the people gathered to a periodical festival, foremost among whose attractions were the achievements of the race course and the ring. It is true, sir, contrasting the present with the past, that in your curriculum no gaudy and glittering chariots, urged by filleted tyrants, have flashed their useless

splendor in our eyes; but in their stead you have shown us troops of gallant steeds, stronger of sinew, fleeter of foot, and lither of limb, than ever champed a bit or struck a hoof in the Elian circle, and backed by toil-hardened men, who live in the daily practice of a liberty beyond any of which the Greek had ever dreamed. It is true, sir, that within your enclosures no naked wrestlers or sturdy athletes have tortured their supple joints in degrading encounters; but better far than these, you have set before us whole droves of cattle preeminently fitted for the dairy, the shambles, or the yoke; whole flocks of sheep, rich in the wool that gives activity to our looms, and the flesh that ministers to the healthy, and tempts even the sated appetite; whole herds of swine, suggestive of that abundance which, out of our surplus, enables us to feed the hungry of the earth; and all these you have presented so cared for and provided, so pampered and fattened, that, while on the one hand you have avoided whatever might lower the condition of man, on the other, for his use, and convenience, and enjoyment, you have elevated the condition of the brute. And, Mr. President, if in all things else this anniversary celebration of the United States Agricultural Society had fallen short of the far-famed celebrations of old: if, instead of surpassing them, as it has, in all the manifestations of material superiority connected with the multiplication of human comforts, it had failed to match their meanest efforts; if, instead of the invincible demonstration of progress which every incident of the display has contributed to strengthen, there had been equally unmistakeable proofs of stagnation or retrogression; there is one thing in which it has gone so immeasurably before them, that for that, and that alone, it would be a thousand fold more entitled to our praise. Mr. President: the Greek, with all his elegance and refinement; with all his philosophy and learning; with all his exquisite appreciation of poetry, and music, and painting, and sculpture, and statuary, had no adequate conception of the true value and just position of woman, and admitted her to no participation, unless in exceptional cases, in his higher pursuits and graver occupations. As part of his general system, she was prohibited, on pain of death, from being present at the ceremonies of the sacred island; and the reservation in favor of the free-love priestesses of Ceres only attested more significantly the dishonoring character of the exclusion. You, sir, have been guided by a wiser and better spirit, and recognising that social equality of the sexes, which reason and revelation alike teach us, you have thrown your gates wide open to the maids and matrons of the community, you have given them due precedence as well in the spectacle as at the banquet, and in the bright, the thoughtful, the eloquent faces which at this moment turn towards me, I perceive the visible tokens of the illimitable advance which our Christian has made over heathen civilization.

Mr. President: In the most glorious era of Grecian Art, under the administration of the magnificent Pericles, the wealth and power of that distinguished ststesman were directed to the construction of such works, as being immortal themselves, might confer immortality on their authors and projectors. First among these in grandeur, in beauty, in costliness, was the colossal statue of Jupiter by Phidias. Towering in its pride of place in the temple on Mount Olympus, gorgeous with gold, and ivory, and all manner of precious stones, that transcendant result of genius drew to it all the visitors of the Olympic games, who offered their devotion rather to the conscious presence of a divine art, than to the imaged incarnation of the potent Thunderer, which sat in cold and stately majesty before them. Sir: nearly fourteen centuries have rolled by since that statue—the faith it typified having long before perished—was buried beneath its own smouldering embers at Constantinople, then the brilliant seat of the Imperial Cæsars. And not alone have the faith and its emblem perished. The classic traveller gropes in vain among the obliterated landmarks of Antilla for traces of the Hippodrome, or vestiges of the Prytaneum. Constantinople, smitten with the plague spot of a corrupt religion, and emaciated by the long exhaustion of a feeble dynasty, writhes in the death grasp of inevitable dissolution. The Greek himself, enervated alike in language and in spirit, resembles his fathers only in name. But, Mr. President, on a new continent, under a new dispensation, and a new polity—professors of a purer creed, possessors of a surer heritage—we have to-day commemorated a new Olympiad. From all parts of a republic, mightier in its infancy than Athens in its prime, there have crowded earnest candidates for the honors, valiant strugglers for the prizes you have had to bestow. Nor have the statue and the temple been wanting. Beneath the dome of your capitol, we have marked the placid dignity of our Pater Patriæ, whose deeds and whose virtues shall survive in the affections of distant generations, when the old mythology, father God and all, with all its vanities and vices, has sunk into utter oblivion. From the foot of a neighboring eminence, we have gazed on the simple column which crowns the spot consecrated by the blood of the primitive martyrs of American freedom—a column which, simple though it be, is dearer in the associations which cluster around it than any hoary pile, no matter how venerable in its antiquity, nobler than any modern trophy,

"Built with the riches of a spoiled world."

And, Mr. President, whatever of pride the cultivated Greek may have felt in contemplating the master-piece of Grecian skill,—whatever of reverence the pious Greek may have felt in contemplating the master-deity of the Grecian Pantheon,—we who are now assembled from the north and the south, from the east and the west, have felt a loftier pride, a holier reverence, than ever Olympian statue or Olympian temple inspired, as, filled with solemn memories of the past and jubilant hopes of the future, we have stood before the marbled form of our own Washington, or besides the granite monument that records the story of Bunker Hill.

Relative Proportions of Food for Man Yielded by the same Herbage in the Forms of Beef and Milk.

A curious economical question, in connection with the value of vegetable produce in feeding cattle, presents itself to us when we come to compare the proportions of human food which may be obtained from the same weight of herbage when cattle are fed with it for different immediate purposes.

A ton of hay may be given to a bullock to be converted into beef. Another ton of the same hay may be given to a cow to be converted into milk. Would the beef or the milk produced contain the larger supply of food for man? We have rather imperfect data to rely upon in answering this question, but they lead us to very interesting results.

1. According to Sir John Sinclair, the same herbage which will add 112 lb. to the weight of an ox, will enable a cow to yield 450 wine gallons, or 3600 lb. of milk. This milk will contain 160 lb. of dry curd, 160 lb. of butter, 180 lb. of sugar, and 18 lb. of saline matter, while the 112 lb. of beef will not contain more than 25 or 30 lb. of dry muscle, fat, and saline matter together; that is to say, the same weight of herbage which will produce less than 30 lb. of dry human food in the form of beef will yield 500 lb. in the form of milk.

2. But this statement of Sir John Sinclair's is, I fear, not to be relied upon. We have another, however, somewhat different, from Riedesel, a Continental authority. He says that the same quantity of hay will produce either 100 lb. of beef, or 100 imperial gallons (1000 lb.) of milk. This quantity of milk contains only 150 lb. of dry food, but it is still five times as much as is contained in the beef.

This statement of Riedesel is also to be received with hesitation; but the subject is interesting and important, as well as curious, and is deserving of further investigation. Should the population of the country ever become so dense as to render a rigorous economy of food a national question, butcher-meat, if the above data deserve any reliance, will be banished from our tables, and a milk diet will be the daily sustenance of almost all classes of society.

Influence of Circumstances in Modifying the Practical Values of Animal and Vegetable Food.—The indications of theory and the results of general practice, in regard to the nutritive power of different vegetable substances, are modified by many circumstances which ought to be borne in mind. Whether fed for work, or for the production of flesh or milk, the effect of the food given to animals will depend partly on the kind, breed, and constitution of the animal itself—on the general treatment to which it is subjected, and the place in which it is kept—on its size and state of health—and on the form in which the food itself is given.

1. *The breed or constitution*, every feeder knows, has a great influence on the apparent value of food. Some breeds, like the improved Short-Horn, have a natural tendency to fatten, which makes them increase in weight more rapidly than other breeds, when fed upon the same food. And even in the same breed, the rapidity with which one animal lays on flesh will sometimes make it two or three times more profitable to the farmer than others which are fed along with it.

2. *Warmth and shelter* cause the same amount of food to go farther, as do also gentle treatment and the absence of glaring light. Sheep have produced double the weight of mutton from the same weight of vegetable food, when fed under shelter, and kept undisturbed and in the dark. It is probably from this beneficial influence of warmth that, in the North American States, a difference of 25 per cent. is observed in favor of the spring and summer over the winter feeding of the pigs upon similar food.

3. *The form in which the food is given* is of no less importance. Grass newly cut goes farther than after it is made into hay; and the opinion is now becoming very prevalent, that steamed, boiled, or otherwise prepared food, is more wholesome for cattle, and more economical to the feeder, than the same food given in a dry state.

In the case of horses, the difference between the practice of giving all the food dry and uncut, and that of giving all the hay cut with the oats and beans crushed, and an evening meal of steamed food, is such as to effect a saving of nearly one-third. Thus, the same wagon horses which consumed 3½ bushels of oats per week, and 14 stones of hay, when given uncut, uncrushed, and uncooked, were kept in good condition by 2½ bushels of oats, 8 stones of hay, and 7 lb. of linseed when the grain was crushed, the hay cut into half inch chaff, and the linseed with a little bean-meal and cut hay made into a steamed meal-feed in the evening.

4. *The malting and sprouting of barley* is by many practical men considered to increase its nutritive qualities. It is certain that, when mixed with boiled potatoes to the extent of three or four per cent., and kept warm for a few hours, bruised malt produces a prepared food which is much relished by milch cows, and is profitable to the dairyman. There is reason to believe that similar mixtures with other kinds of food would produce similar beneficial effects.

Mr. Hudson, of Castle Acre, feeds his farm horses on 12 lb. of *sprouted* barley a day, besides their fodder; and this, on his light land, keeps them in good condition. It is prepared by steeping the barley for 24 hours, and then putting it into a heap and turning it over for five days.

5. *The souring of food* of all kinds has, by almost universal consent, been found to make it more profitable in the feeding and fattening of pigs. It makes them fatten faster, and gives a firmer and whiter flesh.

Many other circumstances also modify the real practical value of food, and cause it to produce results different from those indicated by its chemical composition. But to those, want of space does not permit me here to advert.—*Johnson's Ag. Chemistry.*

The New Jersey State Fair.

The crowded state of our columns last month, in consequence of the publication of the entire reports of the Committees of the Pennsylvania State Exhibition, prevented us from noticing, as we had fully intended, the exhibition of the New Jersey State Society. As a first effort, it was certainly most creditable, and argued well for the future success of the Society. When we look back to the early exhibitions of our own and other State Societies, we have good grounds for congratulating our neighbors on the other side of the Delaware.

The arrangement of the grounds was such as to make them most inviting in appearance. A very large part of the enclosure was shaded with fine trees, rendering it much more pleasant to visitors than fair grounds usually are.

The attendance of visitors was large, and would have been greater, but for the unpromising appearance of the weather in the early part of the week.

From the well known character of New Jersey farmers in regard to the growing of superior vegetables, we were led to expect a very superior display in that department. In this, however, we were somewhat disappointed. The vegetables exhibited were remarkably fine, but not in such quantities as we know could have been brought forward with a very little effort. Another season will remedy this error.

Of horses, the display was very superior—better we think than any other department of the exhibition, and decidedly better than that of our own State. Good horses are characteristic of New Jersey. There is a decided taste for the improvement of these noble animals in the State, and the devotion of the visitors in this direction was evidenced by the marked attractions which the horse ring had for the large majority. In fact,

it monopolised the crowd whenever the horses were brought out.

The cattle were fine and in good number. Some remarkably good animals were exhibited, and, amongst them, the fine Devon bull owned by Mr. DE FORREST, of New York. This animal, we observe, was awarded the first premium at the recent United States Exhibition at Boston. We have not space to enumerate many others exhibited.

Of agricultural implements there was an immense number on exhibition, and many that were not only new but of superior construction. The competition was warm between different exhibitors. We have rarely seen a better or larger display.

The department of domestic manufactures, fine arts, &c., was well filled and highly creditable.

The very best feeling prevailed, and the promise, that next year New Jersey would do better, was in the mouths of many, who, we know, will make that promise good.

Italian Rye Grass.

To the Editor of the Farm Journal—Dear Sir:—In the September number of the Journal, I find an article in defence of the Italian Rye Grass, signed N. G. Mc., of Pittsburg, and purporting to be a reply to mine in the July number.

As a proof of the excellence of the Italian variety, your correspondent cites the mere fact of cattle preferring it to clover! This is invariably the case with all rye grasses, and also with an indigenous variety of grass (a perfect pest) known by the name of Pwitch, but which no farmer ever thought of cultivating. In his second "noted fact," he says a field of bottom land yielded, under ordinary labor, *five cuttings in one season*, two of which were ripened for seed. If there is no mistake here, and if such a thing ever was done, I hope he did not sell the seed for the sake of his purchasers! Two crops of seed properly matured (which I never saw) would take *five or six* months, two of hay *three* months more, and nearly *another* month would be required for that fifth fine crop into which the cattle were turned. In all, more than *nine months* of vigorous vegetation, and no allowance for frost or ungenial weather of any kind! Truly, your correspondent must have been himself "sadly imposed upon, or else he is unreasonably ignorant of the subject on which he writes." He does not say in what part of the United Kingdom this famous field was situated.

Not only present but after crops require consideration, and as the chief profits of a farmer are obtained after the land has been enriched by what is called seed culture, it behoves all to have a care and select such varieties of seed only as ameliorate, and not those that exhaust, the soil.

When a resident in England, I flatter myself I had some experience in the growth of rye grasses, as I owned, and at that time occupied, lands in several of the leading agricultural counties. From the system of management best adapted to those counties, more rye grasses were grown there (and I have no doubt still are so,) than perhaps in any other part of the United Kingdom. As I stated in my previous article, my personal experience in the growth of Italian Rye Grass is very trifling, but I have had many opportunities of seeing the experiments and hearing the opinions of those who have given it a fair trial.

Your correspondent's account of that noted field of bottom land reminds me of a story I once heard of a farmer, who had a field in some part of the Emerald Isle, (further the deponent sayeth not,) who, conscious of the fatness of the soil, and wishing to lubricate his crops with a little pork, planted this field with pigs' tails, and in the course of a few months it was overrun with the finest and fattest little pigs in *that part* of the country. I did not hear what effect the young porks had on the soil, so I cannot say whether, like Falstaff, they "larded the lean earth as they walked along," or like the Italian Rye Grass proved merely an exhauster.

Yours truly,

Philadelphia, Nov., 1855. JNO. WM. GIBSON.

For the Farm Journal.

Agricultural Exhibitions.

MR. EDITOR:—Your article in the November number headed "Agricultural Exhibitions," is well timed, and deserves a careful reading by every farmer. In many of the counties, the most vicious, such as broken down corrupt politicians, rumsellers, horse-jockeys, and other shallow brained creatures, have taken hold of these exhibitions by force, and in many cases have so disgraced them that the best and most respectable farmers are disgusted and stand aloof, which is precisely the proper course, for no man of character ought or will countenance the gambling, horse racing, wooden circus and negro shows that unfortunately disgrace agricultural exhibitions. In one of the counties beyond the Blue Mountains, where a miserable chap acts as President, and the Society is in the hands of these unprincipled persons, in order to raise the wind, admitted all these disgraceful exhibitions within the enclosure on payment of stipulated sums. If the reputation of county exhibitions is to be saved, it becomes the duty of the farmers to fill the offices with men of character and principles that will not suffer such conduct. A FARMER.

Schuylkill co., Nov. 12, 1855.

☞ The returns of the Registrar-General of Agricultural Statistics for Ireland show that there has been this year an increase of 87,293 acres on cereal crops, of 25,513 on green crops, and of 53,873 on meadow and clover, whilst there was a decrease of 54,297 *on flax*. The total increase in the extent of land under crops is, therefore, 112,382 acres.

Beans for Horses.

Oats with me is a very poor crop, and are scarce in this district. Beans are plentiful with me. I wish to feed my horses on the latter, but there is considered to be a danger in using beans till they are hardened in the stack—say till Christmas. Would boiling or steaming obviate this? And are boiled beans for horses in hard work equal to bruised beans? *S.* [Will any one who has had experience of beans soaked in water previous to use as horse food give it to our correspondent?]—*Agricultural Gazette.*

Farmers' High School.

Office of the Penna. State Agr'l Society, Harrisburg, Sept. 12th, 1855.

The Board of Trustees of the Farmers' High School of Pennsylvania met this day. Members present: Gov. James Pollock, James Gowen, President of Pennsylvania State Agricultural Society, Andrew G. Curtin, Secretary of the Commonwealth, Frederick Watts, H. N. McAllister, James Miles, Alfred L. Elwyn, A. O. Hiester, John Strohm, and Robert C. Walker.

The Governor, James Pollock, in the chair.

Frederick Watts from the Committee to view certain lands with a view to the location of the Farmers' High School, made the following report:

Since the last meeting of the Board, the Committee by two of their members took occasion to examine the farms of Mr. H. Easton, of Franklin county. Two of these farms, which lie near to the town of Louden, on the Pittsburg turnpike, are situated upon the Conadocheague creek, and each contain about two hundred acres of excellent limestone land, well improved and cultivated. The improvements are of brick, and as to the dwellings and barns, they are of the best kind. These farms are now worth sixty dollars an acre. Upon the one nearest the town of Louden, there is a large and never failing spring of water. Another farm of Mr. Easton's, which he calls the Wolford Farm, is situated about two and a half miles from Louden, and about the same distance from Mercersburg, and on the great road between these places. This is a beautiful farm of two hundred and forty acres, about one-third of which is slate underlaid with limestone, one-third is limestone, and one-third of clay meadow land of excellent quality. The dwelling is a fine brick house and the barn is built of cut limestone. This is a most desirable property, and having upon it a very large and never failing spring of limestone water. Mr. Easton does not propose to *give* all of this Wolford Farm to the Farm School, because he considers it from three to five thousand dollars more valuable than either of the other two which he does propose to grant gratuitously; but the citizens of Mercersburg propose to make up and pay the difference in value between the farms, so that this Wolford Farm may be considered as offered to the Trustees gratuitously. Your Committee also beg leave to report the following communication made to them by Mr. Blair:

HUNTINGDON, Sept. 3d, 1855.

To the Trustees of the State Agricultural College,—Gentlemen:—I propose to convey to the Trustees of the College or School aforesaid, for the purposes for which the same was incorporated, a farm of limestone land, situate in Dublin township in the county of Huntingdon, containing nearly two hundred acres. This farm adjoins the road leading from Mount Union on the Pennsylvania Railroad to Chambersburg, within one mile of Shade Gap, seventeen miles east of Mount Union and thirty west of Chambersburg. About one hundred and thirty acres of it are cleared and cultivated, and about twenty of it are meadow. The land is quite level. Limestone quarries are opened on it in several places, and every part of the premises has abundance of spring and running water. This property is located in a very healthy, moral and improving neighborhood. This farm I propose to convey you on condition that the College aforesaid be located thereon. DAVID BLAIR.

The following proposition was made by Gen. James Irvin:

To the Trustees of the Farmers' High School of Pennsylvania,—Gentlemen:—The above diagram (see letter on file) represents one of the tracts of land offered by me some time since to the Farmers' High School, and as the Committee and those of the Trustees who visited the ground, thought it would be desirable to have a larger tract than two hundred acres, I have had laid off one hundred acres on the west and one hundred acres on the east, making in all four hundred acres. This tract is the second one visited by the Committee, and lies on the north side of the public road leading from Centre Furnace to the Pennsylvania Railroad at the mouth of Spruce Creek, and distant from there about twenty-one miles. I propose, on condition the Institution be located on the above tract, to convey to the Farmers' High School of Pennsylvania in fee simple, at any time after the location shall have been made that the Trustees may require, the two hundred acres included in the black lines. I also propose to lease to the Institution, if the Trustees desire it, the adjoining two hundred acres for the term of five years from the first day of April next, at the rate of six hundred dollars per year, with the right to call upon me at any time within said term to convey the same to the Institution in fee simple, clear of all incumbrance, on the payment of sixty dollars per acre, say twelve thousand dollars, one-half thereof on making the conveyance, and the balance in two equal annual payments thereafter. I will give the Trustees immediate possession of the whole, except so far as the tenants now on the property may require possession to enable them to gather in the present crops.

Yours respectfully,

JAMES IRVIN.

The following guarantee was presented by H. N. McAllister:

To the Trustees, &c.—Gentlemen:—Whereas the citizens of Centre and Huntingdon counties have subscribed upwards of ten thousand dollars to the Farmers' High School of Pennsylvania, on condition that Institution be located on the lands offered by Gen. James Irvin, of Centre county, and whereas, the responsibility and standing of many of the subscribers are unknown to the Trustees, we do hereby guarantee that the sum of ten thousand dollars shall be collected and paid upon said subscription to the Farmers' High School, agreeably to the terms and conditions thereof.

H. N. MCALLISTER,
JAMES IRVIN,
Sept. 12th, 1855. A. G. CURTIN.

Col. Elias Baker, of Blair county, being present, proposed to donate to the Farmers' High School, upon condition the Institution be located thereon, two hundred acres of land, situate about two miles southwest of Altoona. Mr. David Caldwell being also present, proposed on behalf of the citizens of Blair county to give to the Trustees two hundred acres of land in addition and adjoining the said land of Elias Baker, and in addition also to pay the sum of ten thousand dollars, upon condition the Institution be located upon the said land of Elias Baker.

Mr. Caldwell then offered the following guarantee:

We, the subscribers, hereby guarantee to the Trustees of the Farmers' High School, that the sum of ten thousand dollars shall be raised by subscription and paid to the said Trustees—one-third to be paid at the time of the conveyance of the title to the land of Elias Baker, and the balance in three equal annual payments.

(Signed,) ELIAS BAKER,
DAVID CALDWELL.

Frederick Watts offered the following resolution:

Resolved, That the adoption of the proposition of Gen. James Irvin for the location of the Farmers' High School will best promote the interests of the Institution, and that the same is hereby adopted.

The question being on the adoption of the resolution, James Gowen moved to strike from the resolution the name of James Irvin and insert that of Col. Elias Baker. The question being taken on the amendment, it was decided in the negative. A. L. Elwyn moved to strike from the resolution the name of Gen. James Irvin and insert that of H. Easton, which was decided in the negative. Frederick Watts moved that the question be postponed for the present, and that James Gowen, A. O. Hiester and John Strohm be appointed a Committee, whose duty it shall be to examine the lands proposed to be donated, and determine which shall be adopted. The question was then taken on the motion to postpone, and disagreed to. Robert C. Walker moved to strike from the resolution the name of Gen. James Irvin, and insert that of George A. Bayard, which motion was also decided in the negative. The question then recurring on the original resolution, it passed.

Alfred L. Elwyn from the Committee appointed at the last meeting to select and report upon a Principal for the Institution, reported that the Committee had agreed to recommend Charles B. Trego.

Frederick Watts moved that the Committee heretofore appointed on the subject be instructed to procure the services of Charles B. Trego as Principal of the Institution, at a salary not exceeding fifteen hundred dollars, and that in case he does not accept, to seek some other person for the position, and which was agreed to.

On motion, Frederick Watts, H. N. McAllister and Alfred L. Elwyn were appointed to procure from Gen. James Irvin the title to the land proposed to be donated.

On motion, it was resolved that Frederick Watts, H. N. McAllister and James Miles be appointed a Committee to act with the Principal of the Institution in making preparations for building and for other purposes, and that Moses Thompson, of Centre Furnace, be requested to act with said Principal and Committee.

On motion of James Gowen, Frederick Watts was unanimously elected President of the Board of Trustees.

Frederick Watts presented the following resolution, which, on motion of James Pollock, was agreed to:

Resolved, That the Trustees of the Farmers' High School of Pennsylvania appreciate with a high degree of favor the contributions which have been made to practical science, as it may be applied to commerce and navigation, by Lieut. M. F. Maury, of the United States Navy, and that his generous offer that the influence of the Government be extended to enable him to prosecute the same inquiries for the benefit of agriculture, meets with our most cordial approbation.

On motion, it was resolved, that the President of the Board be directed to prepare a memorial to Congress representing the wishes of this Board on that subject.

The following is the memorial agreed upon:

To the Senate and House of Representatives composing the Congress of the United States.

The memorial of the Board of Trustees of the Farmers' High School of Pennsylvania respectfully represents, that they are deeply impressed with the idea that the excellence of our political institutions and their permanent security depend mainly upon the intelligence and consequent virtue of the people, that the acquisition of knowledge and the progress of science and useful arts are entitled to the fostering care of the Government, and that that care should extend to the agriculturist as well as the merchant and mariner. We, therefore, look with the highest degree of interest and desire to express the liveliest feelings of approbation of the practical and beneficial results which have been already attained for the benefit of commerce and navigation through the instrumentality of your officers. We, therefore, pray your honorable bodies to make such additional appropriation of means as will enable the efficient officer who has the subject in charge to extend his observations throughout the country and invite the co-operation of other countries, that meteorological observers may act in concert throughout the christian world, and establish a system for the land such as has already been discovered for the sea.

On motion of John Strohm, it was resolved, that the thanks of this Board be tendered to all those who have so liberally proposed to aid in the establishment of the Farmers' High School of Pennsylvania.

On motion, the Board adjourned.

ROBT. C. WALKER, Sec'y.

Harrisburg, Oct. 20th, 1855.

Why the Farmer should give heed to the Man of Science.

The following judicious remarks form the conclusion of a recent lecture by Prof. Tumey, of Alabama, upon science, as applied to agriculture:—

"In conclusion, allow me to say one word upon the apparent indifference with which agriculturists, as a body, listen to the teachings of science. Rural pursuits are far less favorable to speculative states of mind than those of the manufacturer; and hence, while the latter has pressed chemistry into his service, the cultivator of the soil is too often contented to pursue his own chance-directed processes, unaided by the light of science.

"This unnatural divorcement of science and agriculture has often arisen from not distinguishing between agriculture as a *science* and agriculture as an *art*. The man of science investigates one department, and the cultivator of the soil practices the other. Odium is often brought upon what is called scientific farming by the failure of men of science when they attempt the practice of agriculture. Now, I believe that, in general, it will be found that it was not the science, but the common sense, of such men that was at fault. The practice requires a different training, and, however sound his principles, the mere man of science fails for want of it when he attempts to try his own principles practically."

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330
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